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The Ultimate Data Base?

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- ☑ Any number of entry forms for the same database
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- ☑ Default fields that are editable
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- ☑ A selection of useful templates, including one to generate mailing labels on your ImageWriter™ or LaserWriter™
- ☑ Choice of record sizes—1000, 2000 or 4000 characters
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- ☑ Sorting on as many fields as you want, in any way you want
- ☑ Paste Choices, which allows you to create formulas with links, or paste files easily
- ☑ Disk-based, so the limit to your database size is your disk
- ☑ Compatible with all Macintosh computers with at least 512K of RAM



Turning disorganized data into

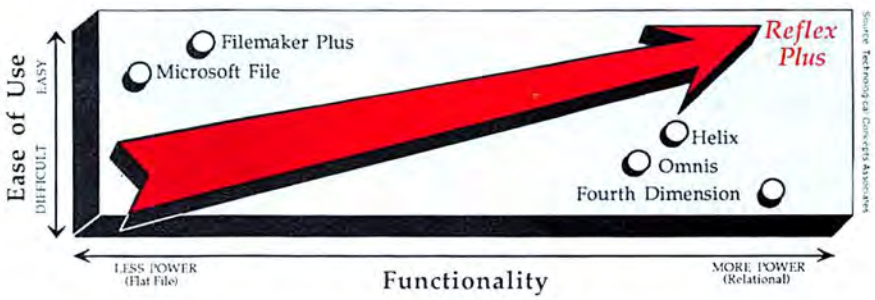
DATABASE SPECIFICATIONS

- ☑ Maximum single field length: 4072 bytes
- ☑ Maximum fields per record: 254
- ☑ Maximum record length: 4080 bytes
- ☑ Maximum records per file: limited only by disk capacity
- ☑ Maximum number of linked database files: 200
- ☑ Maximum number of open windows: 15
- ☑ Maximum number of files that can be used by a report: no limit

THE INFORMATION TREADMILL

Dealing with data is an inescapable reality of modern living—at home and on the job. Especially on the job. Most of it is pertinent. Much of it is valuable. And almost all of it would make our lives more productive—if we could just figure out how to make it work for us without a staff of experts inputting, outputting and making all the right connections.

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useful information: Reflex Plus

Dā-ta-bāse:
"a collection of data organized especially for rapid search and retrieval."

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THE FLAT FILE MODEL

The most elementary form of database manager is the flat file database manager. It allows you to manage lists—like inventories, basic mailing lists, payment records, prospect lists and so on, but its power is limited.

THE RELATIONAL MODEL

A relational database manager such as *Reflex Plus* can manage flat file databases. But its real power comes from the "relational" aspect. It allows you to create multiple flat files, then link and cross-reference records within these files. Oftentimes, the "relationship" established through linking is more important to a user than the original files. Up to now, the most popular relational databases have proven to be cumbersome, hard to learn and difficult to use.

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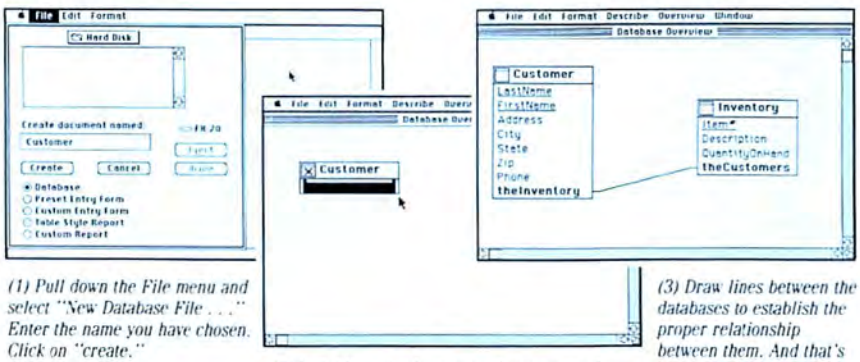
It crunches numbers like a spreadsheet—with 49 arithmetic, text and statistical functions built in. Which means that it's an especially effective productivity tool on your Macintosh.

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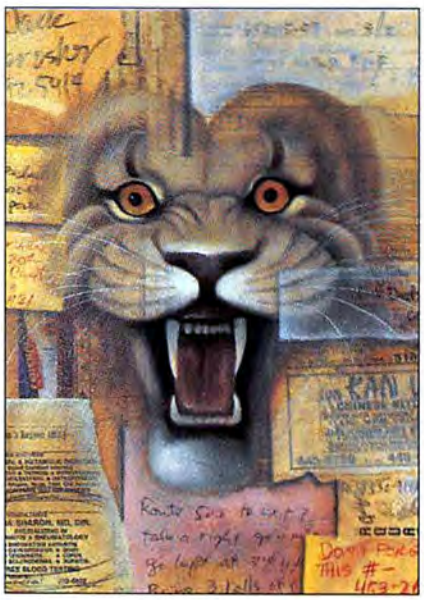
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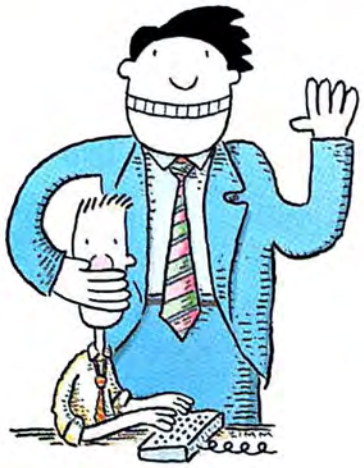
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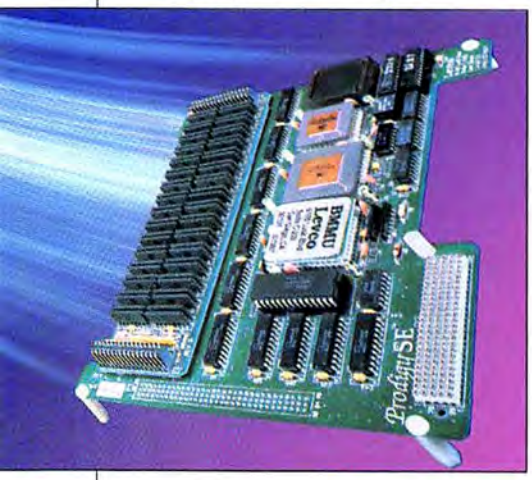


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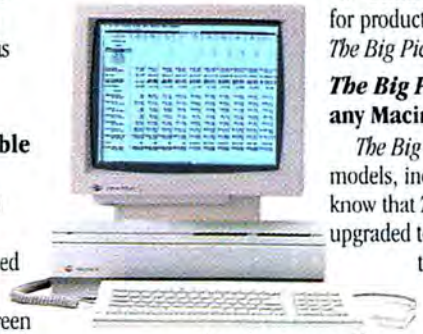
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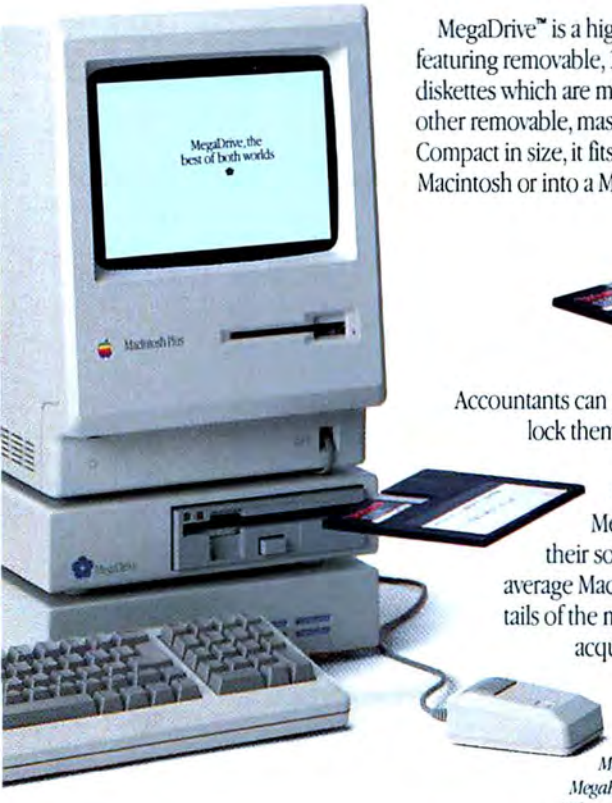
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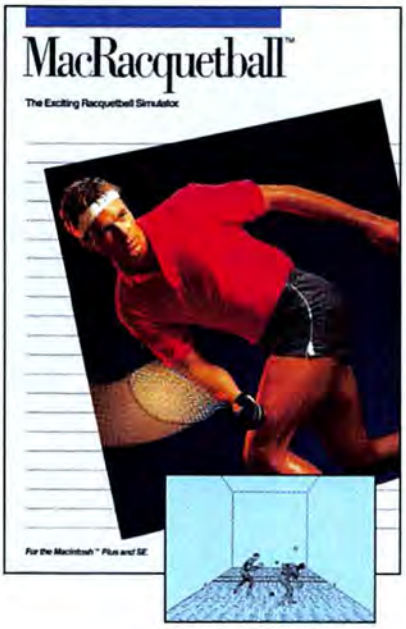
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MacUser
THE MACINTOSH RESOURCE

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Editors absolutely reserve the right to publish none, some, all, or just the parts we managed to complete of the above, due to the inherent problems that occur when reviewing software, hardware and the ever elusive vaporware.

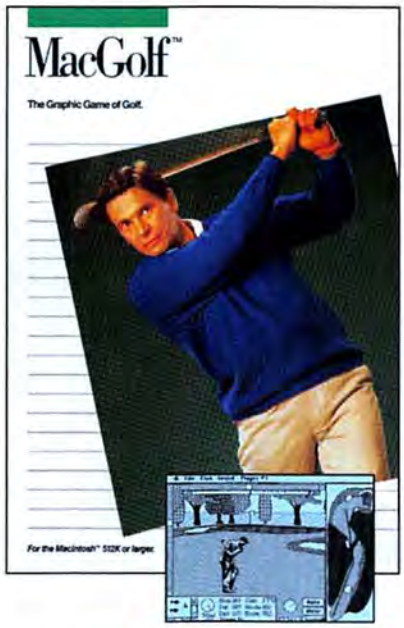


The hottest sport on a court – the hottest game a Macintosh™ can handle.

Even if you've never been on a racquetball court, you'll spark to the excitement of this challenging simulation.

MacRacquetball turns your Macintosh screen into a full perspective 3-D display of court, players and ball. With the mouse, you have complete control of player position, ball placement, ball speed and shots. Two people can play the same game over AppleTalk® or modem.

Superb graphics give MacRacquetball completely convincing realism. There are more than 1000 frames of ultra high speed digitized animation. It's one racquetball court that's always open when you're ready to play.



Enthusiastic players everywhere have made MacGolf the best selling Macintosh game ever.

MacGolf puts you in the picture, a full perspective 3-D simulation of realistic golf action. You match your skills against fairways, roughs, bunkers, water hazards, sand traps and trees.

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When you have the best selling Macintosh game in the world, what do you do for an encore?

Here's new turf for adventurous MacGolfers. These are courses to conquer for mouse wielding pros who have taken the measure of the original MacGolf courses.

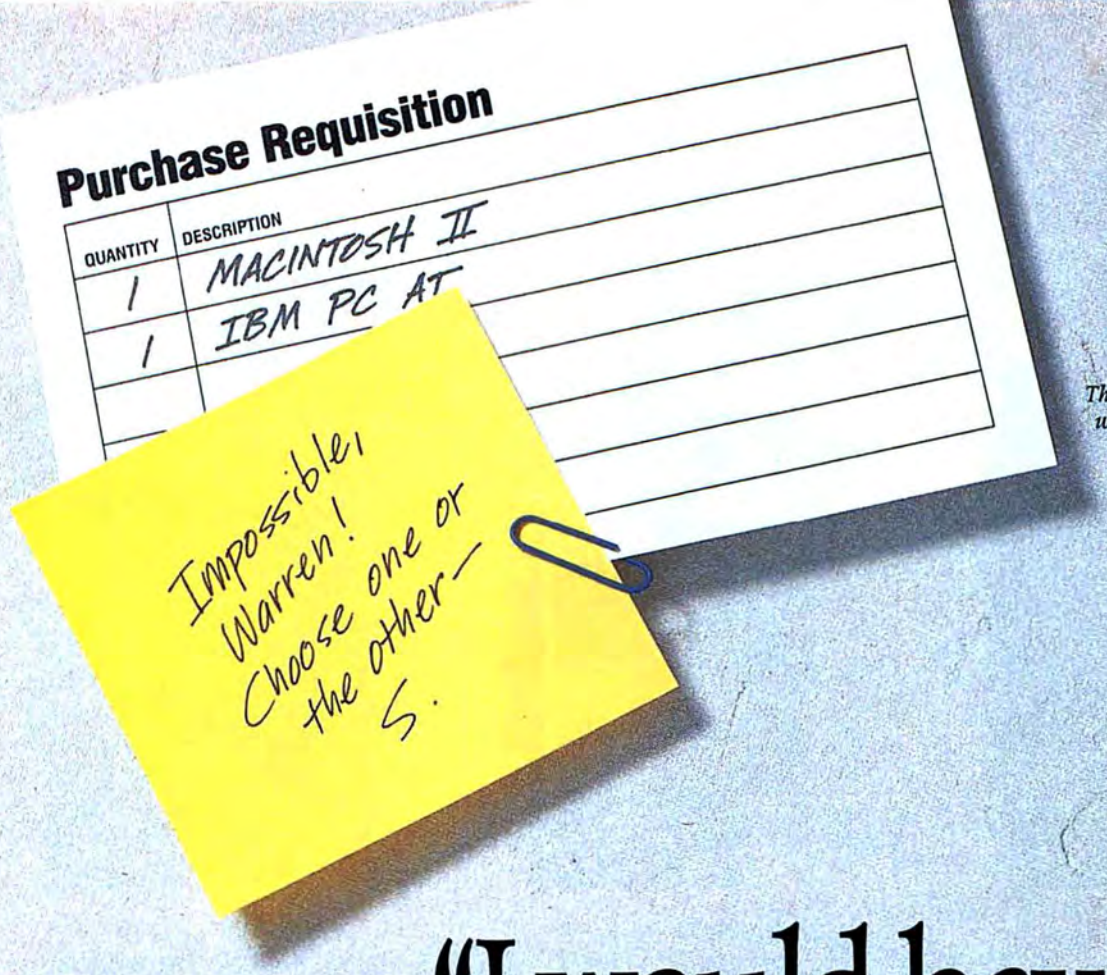
If you liked MacGolf, you'll love what MacCourses brings to the screen. Four new 18 hole, par 72 courses: Cedar Creek, Golden Sands, Thunder Ridge and PCAI International. The fairways, traps, hazards, and putting greens of MacCourses are in a whole new league.

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The obvious solution was unrealistic.

"I would have given up anything to use a Macintosh, except my PC software."

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"You can't have your Macintosh™ and PC too." Famous last words.

People say, "Where there's a will, there's Warren." Which means I don't settle for words like No. Impossible. Can't be done. No way.

So when I decided I wanted a Macintosh, but didn't want to give up Lotus 1-2-3® or dBASE® III, I naturally set about looking for a way to have it all.

The fastest fix was to buy both an IBM® PC and a Macintosh. "Not possible," said the DP/MIS manager. "Pick one. Any one you want, as long as it's MS-DOS® compatible." Witty guy.

Then I searched everywhere for someone willing to loan me a PC in exchange for executive privileges. I was willing to give up anything, but I kept hearing No. Not interested.

Without another alternative in sight, I decided to surrender and settle for a PC. Then, I discovered an article on AST's newest products—MS-DOS co-processors for the Macintosh II and Macintosh SE. The cavalry had arrived.

What I like best about AST's Mac86 and Mac286:

- *I retain the benefits of the Mac desktop while running DOS*
- *I can cut and paste text from both MS-DOS and Macintosh environments*
- *I have full access to DOS programs and data through 5.25" MS-DOS floppy drives*
- *My MS-DOS files share Macintosh hard disk volumes*

The article said AST's Mac86™ and Mac286™ allow you to actually run MS-DOS application programs on your Macintosh. Just plug the DOS processor into your Macintosh II—Mac86 into an SE—and load your favorite MS-DOS application software onto the Mac's hard disk. I was sold.

MS-DOS on my Mac looked and felt just like all my other Mac applications—great. I just pointed and clicked. The MS-DOS prompt I know and love appeared in a window on my screen. From there on, I used MS-DOS programs and commands as if I were working on a PC.



I would have traded anything for the best of both IBM and Mac worlds.

I even moved Macintosh files into MS-DOS, sometimes cutting and pasting parts from one environment to the other. And when I was finished with my PC and Macintosh files, I stored them both on the same Macintosh hard disk without any clumsy file transfer procedures to slow me down.

Back in the Macintosh environment, I still had immediate access to all of my PC files. Using Macintosh software, I reopened a PC file, enhanced it, then merged it with a Mac file. And when I was finished, I printed it on the LaserWriter.®

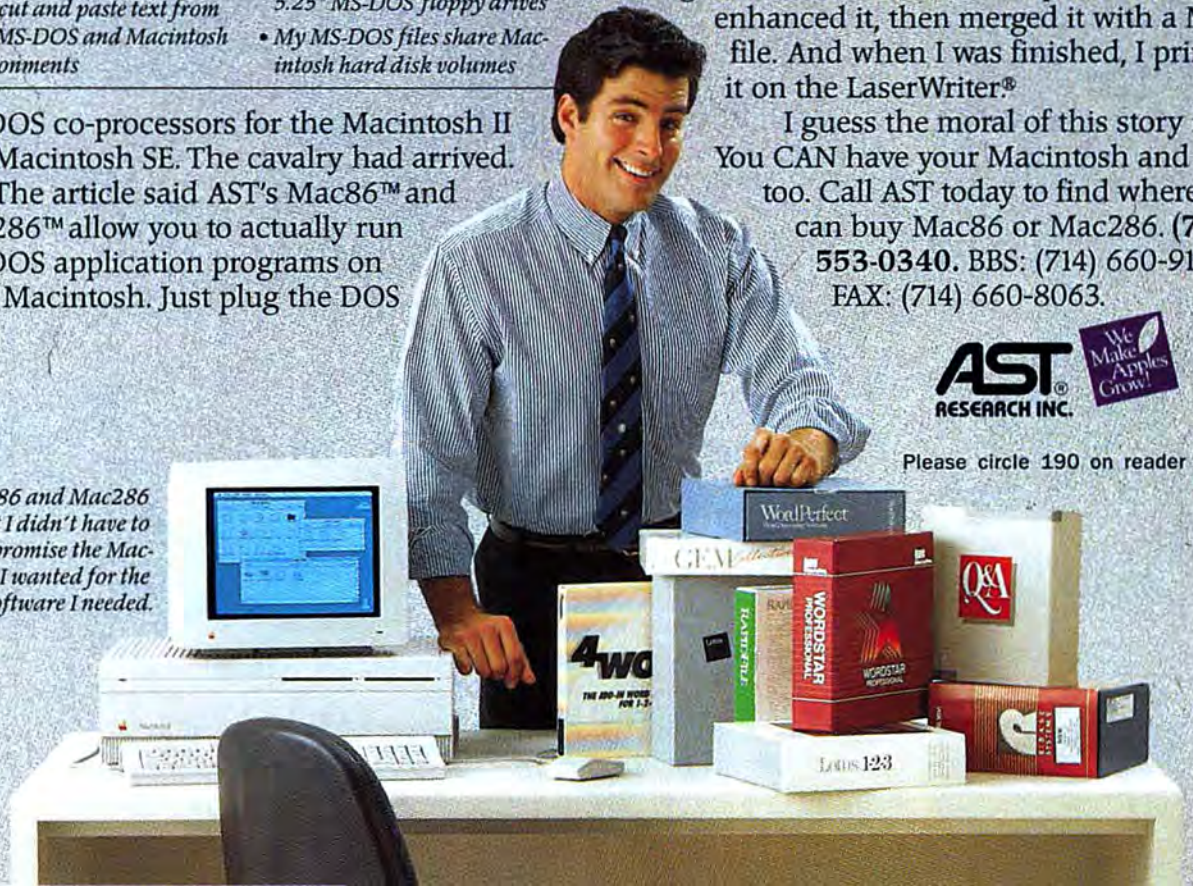
I guess the moral of this story is: You CAN have your Macintosh and PC too. Call AST today to find where you can buy Mac86 or Mac286. **(714) 553-0340.** BBS: (714) 660-9175. FAX: (714) 660-8063.

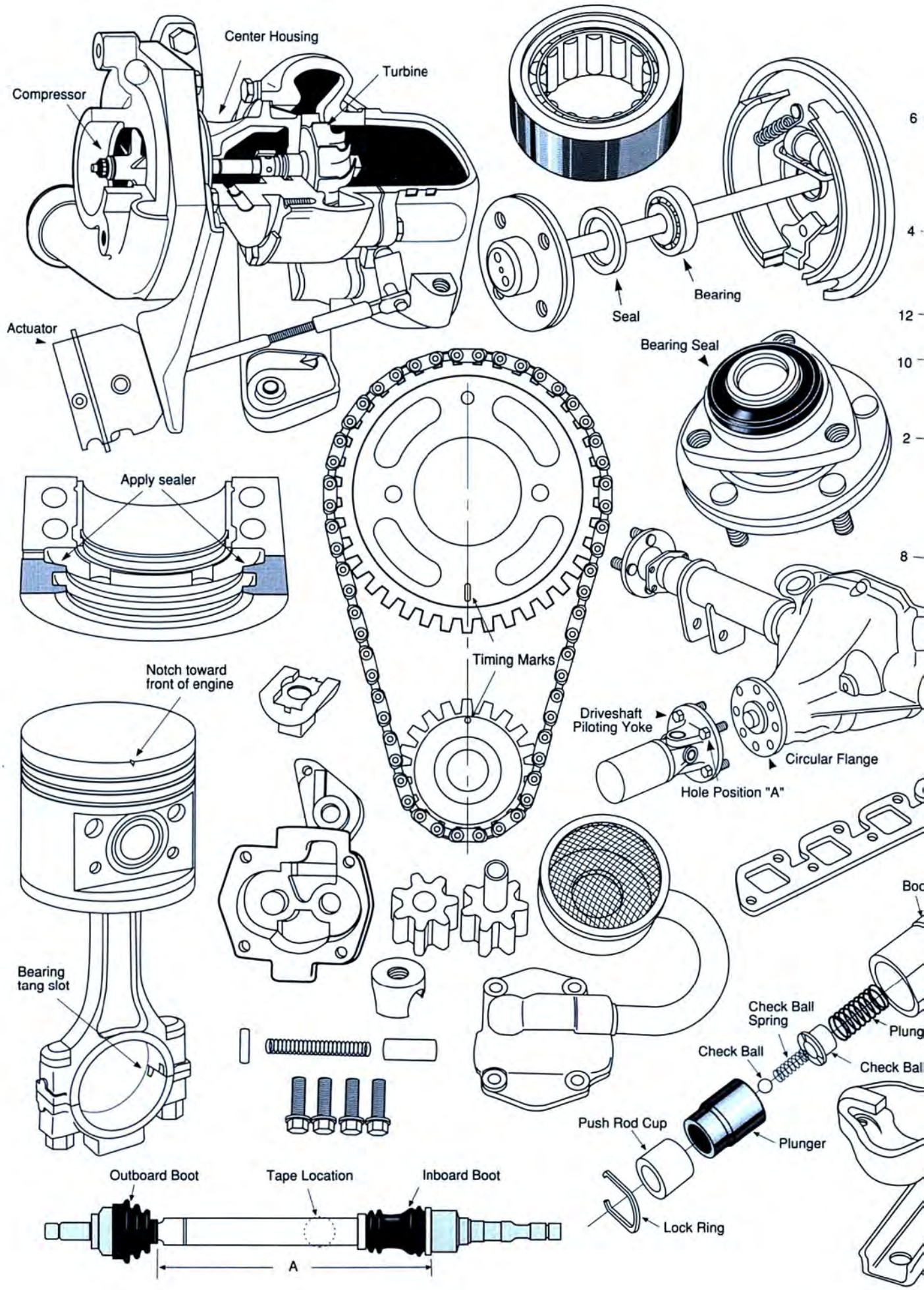
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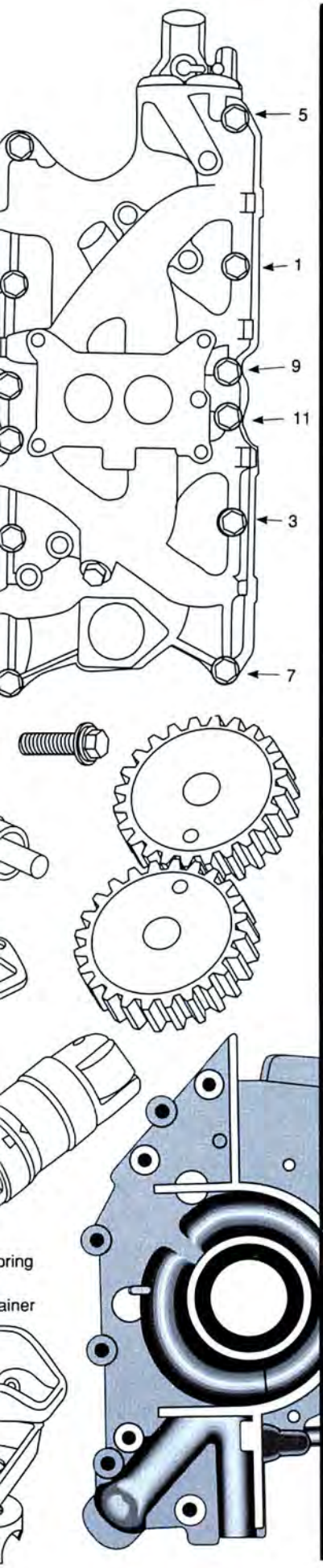
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Mac86 and Mac286 meant I didn't have to compromise the Macintosh I wanted for the IBM software I needed.




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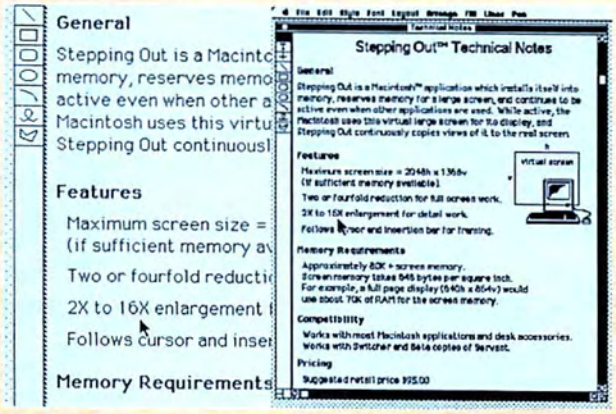


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-MacUser, June 1987

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by Steven Bobker

Things to Come

By now I hope that you've heard of the formation of MacUser Labs. I'd like to explain exactly what the Labs are going to mean to you as a reader of *MacUser*.

The MacUser Labs will be an independent testing organization. They'll be working with industry experts, publishers and hardware manufacturers to develop objective tests for both hardware and software. By the beginning of next year you'll start seeing the results in *MacUser*, as we publish their reports on a regular basis.

The reports will concentrate on a single category, either hardware or software. Expect to see definitive reports on accelerator boards, monitors, add-on upgrades for the Plus, printers (all types) and modems on the hardware side. They're also working with the highly respected PC Labs to test MS-DOS boards for the Mac. Software categories for which Lab Director Chip Carman and his staff are already developing testing protocols are word processors, data bases, page layout programs and accounting software.

Eventually the labs will offer their services to outside publishers and manufacturers, but at first, *MacUser* will be publishing all their reports exclusively. The detailed nature of the reports and the need to create extensive and objective test protocols and standards means that the Labs will not be able to report on whatever this month's latest and hottest product happens to be. What they will provide is another level of information to you—solid, supported by hard facts, objective reports of a type never before seen in our community.

The Lab Reports are not going to displace any of the material currently in *MacUser*. They'll be an additional reason to read the magazine. The regular mixture of features, reviews, columns and good information will continue; we'll just grow a bit.

We plan to grow in other ways too. (Isn't magazine competition wonderful? You're doing a great job there at *Macworld*, Jerry.) In the next several months you'll be seeing some new and exciting writers—some of whose names will be well known to you and some who are exciting newcomers. There will be some new features as well. But all the old stuff is staying. Clapp, Dvorak, Cochran (whose Help Folder is getting bigger, starting next month) and the others are all remaining with us.

We've just moved to new and much larger quarters in Foster City, California. (In fact, the offices are so new that the local post office hadn't assigned us our PO box numbers at press time!) This move will allow us the space to add to our staff, so that we can serve you better. The staff's two newest members are Nancy Groth (Managing Editor) and Jon Zilber (Features Editor). Nancy promises to eliminate the occasional annoying glitch in our physical production (yes, all the pages in the Quick Clicks will be in the right order from now on), and by this time next year you'll be turning to Jon's reviews and articles and wondering why it took so long for a writer that knowledgeable and that good to become known. As we add additional staff, I'll be introducing them to you here.

As in previous years, we'll be handing out our Eddy awards for the best new Mac products of 1987 at the Macworld Expo to be held in early January, 1988 in San Francisco. As an unfortunate consequence of the time it takes to write, produce and distribute a magazine like *MacUser*, we have to make our selections soon. We've already started the long evaluation process. The cutoff date for new products is October 15, 1987. For a product to be considered we must have received a finished version by that date.

We'll have our comparison shoppers and buyers out looking to see what else is out that we might have missed (and to be sure that what we are looking at is also available to you).

In my position I get to see lots of new software. One of the most fascinating is *HyperCard*. It's a truly neat hack. Bill Atkinson has broken the rules (as he did in *MacPaint*) and produced a stunner. But it's not a Mac application, just as *MacPaint* wasn't a Mac application.

One of the major reasons the Mac has been so successful is the consistent interface between programs. And the fact that most programs play "by the rules." That consistency makes the Mac easy and quick to learn. And that's what really started to make the Mac a business machine. Companies discovered what the average user knew from Day One—the learning curve was short and sweet.

Two of the major expenses of installing microcomputers in a corporate environment are training and support. Well, the Mac (any Mac) beats any other microcomputer by at least an order of magnitude. And a large part of that is due to the interface.

Now comes *HyperCard*. It doesn't play by the rules. It doesn't have to follow the interface to work, and most of the stacks I've seen don't follow the interface too closely. Right now it seems fairly easy to learn, but the material being written for it is barely starting to tap its potential. I plan to reserve my final judgment for a while, but I hope that stack developers try to emulate the current interface as closely as possible.

I hope that Apple lets Bill Atkinson continue to work on this program. It has flaws and areas that need work.

And I hope that Apple lets Bill Atkinson continue to work on and support this program. It has flaws and areas that need work. I hope to see *HyperCard* 2.0 real soon. *MacPaint* was surpassed by many newer programs because Atkinson was moved to other projects after it was released and it was never really supported or enhanced by Apple. They just made it work with new machines and new ROMs. I've heard that Bill will be allowed to continue developing *HyperCard* into what might someday be the ultimate program. What Apple marketing does with it is another matter entirely, one that I'll discuss next month.

If you have any comments about the magazine, good or bad, send them to me directly. For now our mailing address is 110 Marsh Drive, Foster City, CA 94404. I'll have our new PO Box number for you next month (I hope). I can also be reached electronically on MCI Mail (SBOBKER is the address) or CompuServe (send Email to 72257,2671). That's not an endorsement of CompuServe and we don't have a free account there (or anywhere). It's just that CompuServe is just a local call for me from both home and office. I'm also on many of the other electronic services but not as regularly. I look forward to hearing from you.

The inside story.



The outside story.



The whole story.



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PROAPP

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by Neil L. Shapiro

When Free Isn't Good

Hey, have you heard the one about Apple being contacted by top-level executives from IBM? They wanted Apple to reflag their PS/2 line for them.

(And now for something completely different.)

THREAT OR PROMISE?

By now most of you have at least heard about Apple's new software company, now yclept Claris. The Claris company will be a spinoff from Apple that will market and sell what used to be Apple's software line.

This means that such things as *MacWrite* and *MacPaint* are no longer Apple-branded products; they are the first fruits of the Claris orchards.

This has been causing quite a stir in the developer community and a new ingredient has been added to this bubbling stew—an ingredient that people are getting pretty hyper about. It seems that Apple will retain rights to at least one program written by Apple's own Bill Atkinson and will even bundle the product with all new Macs.

The product was originally called *WildCard* and is now called *HyperCard* (the name *WildCard* having belatedly been found to be owned by others—others not willing to part with it on the standard terms: money).

How come?

Why did Apple go to all the trouble to spin off a new software company and then, in one of their first actions following the spinoff, decide to keep rights to one program and to bundle it? What does the new company mean to developers and, in the long run, to us? And what does this decision to bundle *HyperCard* and not to give it to Claris indicate about the new company and its relationship to Apple?

SPINOFFS AND SPECTRES

When Apple originally announced they were starting a software company spinoff there were a number of howls heard in the development community. Some developers felt that Claris would be in a position of unfair competition with the smaller companies in the field. For one thing, Apple has so much money that they could simply bury, in advertising and PR budgets, almost every Mac developer they wanted to target with the possible exception of Microsoft. And there was some feeling that the new company might get such things as first looks at new Macs and assorted other, somewhat unfair advantages.

Other developers welcomed Claris, at least publicly, into their marketplace. Some developers indicated that this new company would allow for fairer competition than what went on before.

For example, take a look at the word processing marketplace for the Macintosh and how it developed.

When the Macintosh first came out we all got a *MacWrite* disk. One of the very first things that anyone ever did with a Mac back then was to type their name and change the font and style—and gasp a few times.

Instantly, without any wasted time or any false starts, it was shown that the Macintosh had fantastic potential as a word processing machine (the phrase "desktop publishing" not having any currency at that time).

So, what happened?

We had *MacWrite* for a long, long time. Then we got *Word*. Then it seemed like time had stopped. Well, the sun was still moving across the sky, but no one much was releasing word processors for the Mac.

Frankly, the word processing situation for the Mac had reached a plateau. And no one in the developer community seemed very anxious to market a product that would compete with a flawed but useful freebie on the one hand and a giant-supported biggie on the other.

Then Apple reached a momentous decision, they would no longer bundle *MacWrite* with all Macs. Suddenly more people than you can shake a stylus at began to announce word processing programs for the Macintosh. The floodgates of creativity had been opened at last and we began to see exactly what "what-you-see-is-what-you-get" word processing is all about. Indeed, some of the programs that should be just out as you read these words are themselves astonishing third-generation examples of this unleashed creative force.

The promise of Claris is that the *MacWrite* situation need never be repeated. It is now possible for Apple to provide entry-level or basic programs without stifling the marketplace for more advanced products.

By releasing reasonably priced products through Claris instead of bundling them, Apple actually succeeds in creating a wider marketplace. And by widening the marketplace makes room for other developers to profit as well. And, of course, when there are many choices and companies then we, the Macintosh community, profit as well.

BUNDLING OR BUNGLING?

So here we have Claris spinning onto the scene, a new company that is separate from Apple other than it has some products that used to be Apple's. By its presence it allows the marketplace of products and ideas to grow as well as making money for its own stockholders.

But this is not the end of the story.

Bill Atkinson is a genius. He wrote *MacPaint* and most of the underlying mechanism that makes it work: QuickDraw. For a while, when the Mac came out, he was very visible. Then he disappeared, just vanished into "programmer's jail" and wouldn't tell anyone for a couple years what it was he was working on.

It was supposed to be super.

Then a couple months ago one of my more unnameable unnamed sources asked me if I was interested in previewing a beta version of *WildCard* which was what Bill had been hiding away and working on for so long.

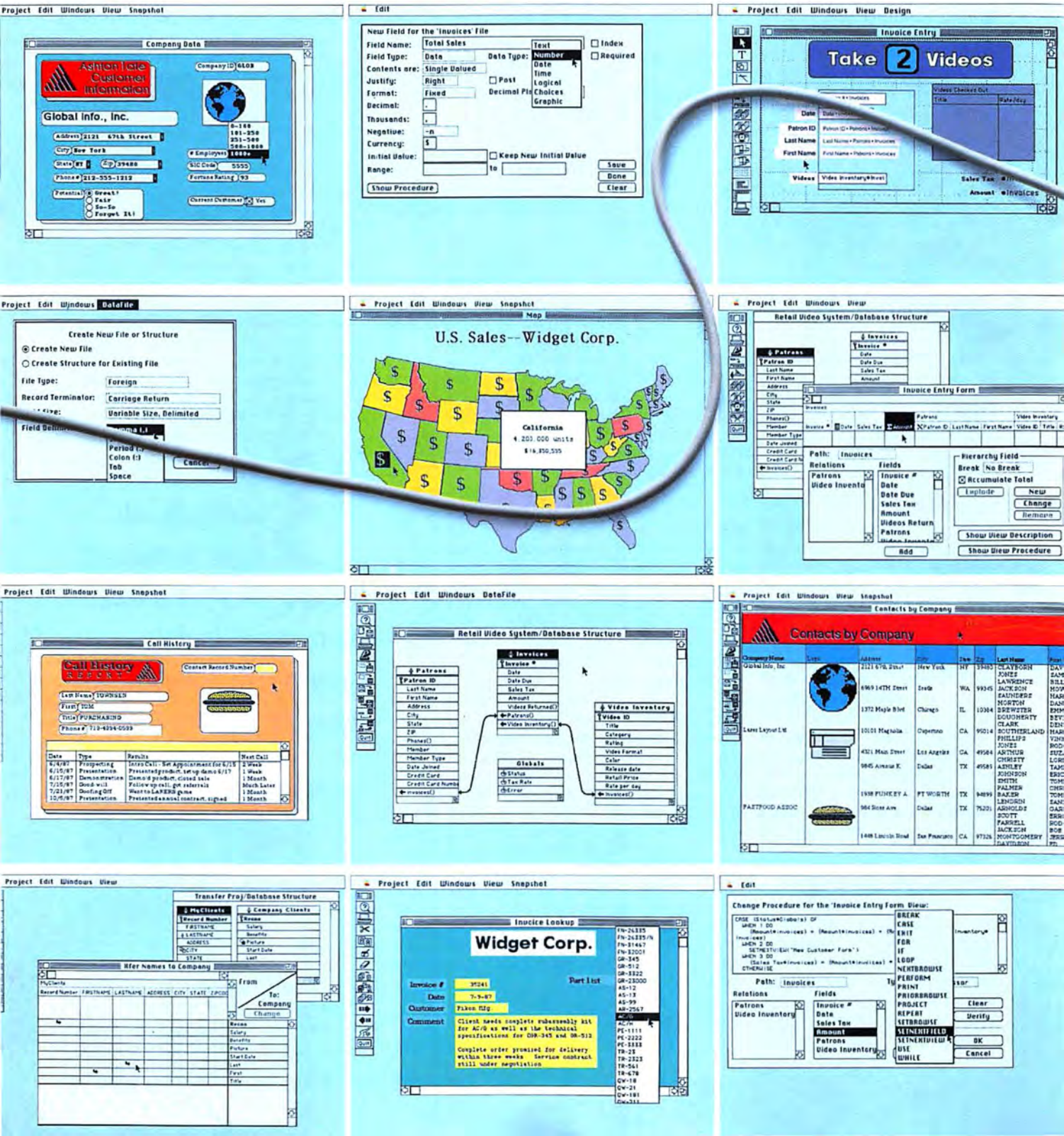
Who could turn that down?

Basically WildCard (oh, all right, we'll call it HyperCard) is a free-form, graphic data base. Picture Habadex programmed by God.



KAREN STOLPER

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With an FPD you can see a full 8½"x 11" page at one time. Without scrolling through or reducing your document. Which means you work a lot faster. And now, on your SE or Macintosh II, you can pan across two pages at a time.



The FPD's 640 x 864 pixel screen provides a flicker-free, stable, virtually paper-like page and a rich high-detail picture. Although its screen is 8½"x 11," its footprint is only 11"x 14," which means the FPD gives you a bigger screen, not a smaller desk.

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The FPD is not a replacement for the screen in your Macintosh. It's an enhancement. Because the FPD actually works in combination with the internal screen in your Macintosh.

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I was just amazed. *WildCard* was something so good that, well, I could see that no one would think that Bill had wasted his time.

Basically *WildCard* (oh, all right, we'll call it *HyperCard* in deference to marketing reality) is a freeform, graphic data base. Remember *Habadex*? Picture *Habadex* programmed by God. You can have on screen just about anything from a phone book to an index card, a graphic form, a Help screen and more—all with buttons to click on and a Macintosh interface that will bring tears to your eyes.

This may not be a much used word any longer in Cupertino but, damn it,

How happy was OWL at news of HyperCard? I don't know—I know how happy I would have been in their position: not very.

someone has to say this and I guess I'll chance it:

HyperCard is *awesome!*

You can do so many things with *HyperCard* that it is mind-boggling. For example, I can't think of a reason to have a printed manual anymore other than as a backup to a *HyperCard* manual on disk. Because a *HyperCard* manual can operate like a self-teaching device. The user can read it like a manual, actually flipping its video pages. And there is a programming language involved which would enable the manual itself to guide the user.

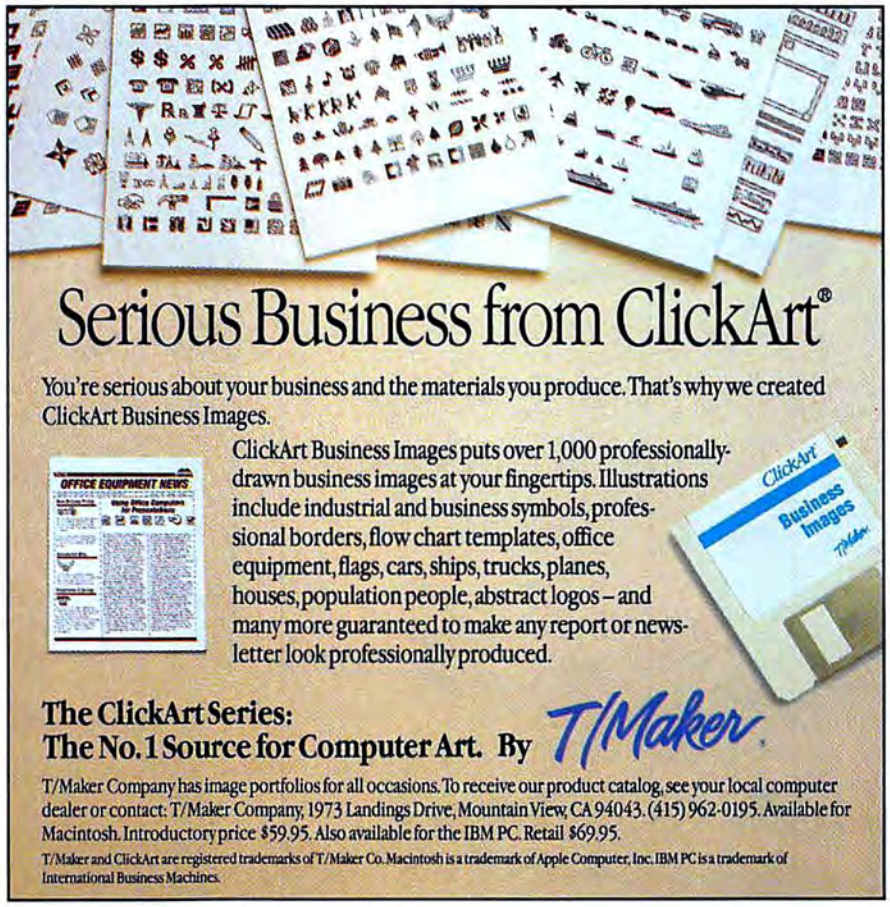
Whoops, that word "guide."

OWL International is a well-known company which publishes a program called *Guide*. The *Guide* program uses the same theory of hypertext that is behind *HyperCard*, although in a more textually oriented manner. In its own way, *Guide* is also an excellent program.

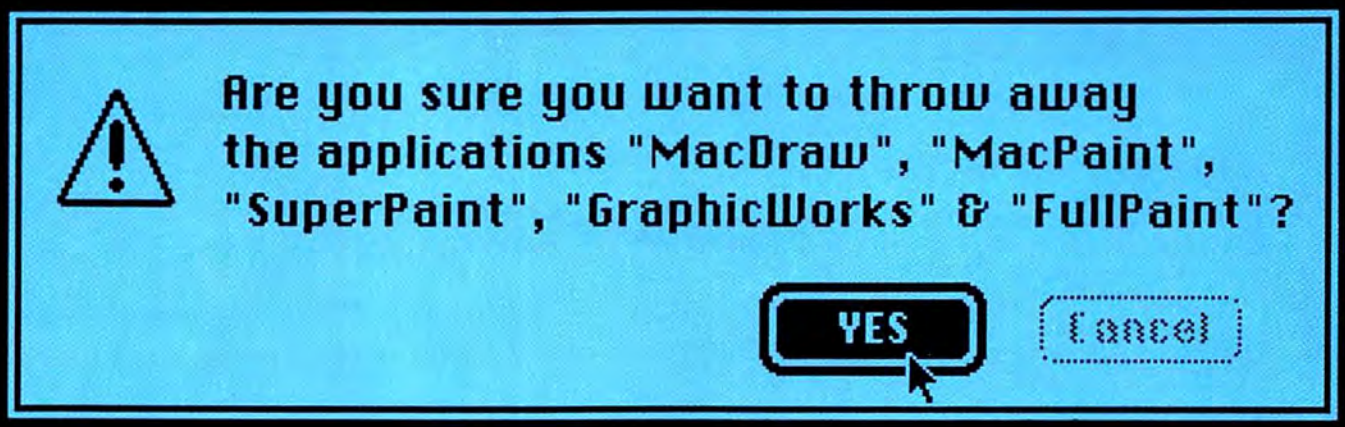
How happy was OWL at news of *HyperCard*? I don't know—I know how happy I would have been in their position: not very. But I would have thought that at least there was a good possibility of zeroing in on and marketing on my own product's differences and features. Why, in a way, a for-sale *HyperCard* actually validates the whole idea of using



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hypertext theory in a program and so might have helped *Guide*.

Now comes some very interesting news: *HyperCard* will be bundled with every new Macintosh sold.

It will not be given to Claris.

It will not be sold at anything higher than a token price.

It will be a packed-in Apple freebie a la the original *MacWrite*.

According to Apple it is "system software" and their setup with Claris particularly excludes system software from having to be marketed by Claris. After all, when you buy a Macintosh you sure enough want a *System* and *Finder* included—those are certainly system software.

Because *HyperCard* has a programming language behind it there are many ways it could be configured to act as a sort of maxi-*Finder*. But saying *HyperCard* is system software is like saying that *Double Helix* is a recipe index. Sure, it can be used as that—but it is also so much more!

DEADLY DELIGHTS?

I like getting things for free as much as the next person. But I am a bit worried as to what this says about Claris, about Apple and about the future of hypertext development.

First, the good news. This more than anything I have seen in the past year revalidates Apple Computer as being the computer company that cares the most about their users. Giving this program away is an illustration of corporate generosity and Bill Atkinson's own personal generosity that most companies and programmers couldn't even imagine.

But giving this program away might not be the best course of action for Apple, for Claris, for developers and even for us users.

From Apple's viewpoint it will tend to stifle any competing product and will lead to fewer products being developed for the Mac in the hypertext area. From Claris' position it has to be seen as a sign of some mistrust of the new kid. This would have been the absolutely perfect product for Claris to cut its marketing teeth on. From a developer's viewpoint it has to seem a bit strange that Apple spun off a company so that they would not be in a competitive position with developers and then competed anyway with another freebie product. From our own user standpoint—good and wonderful as *HyperCard* is—I wonder what the third-generation of such a product would look like?

If history repeats it may take an extra couple years to find out.



Break Those Handcuffs

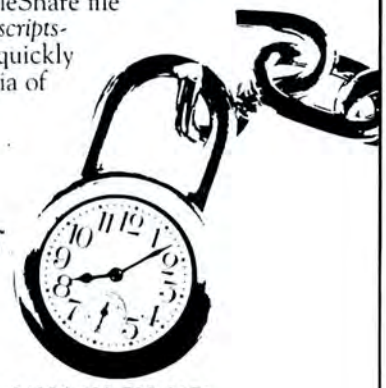
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"Microsoft Excel is unquestionably the most powerful spreadsheet program available on any personal computer." Lon Poole, *Macworld,* September 1985

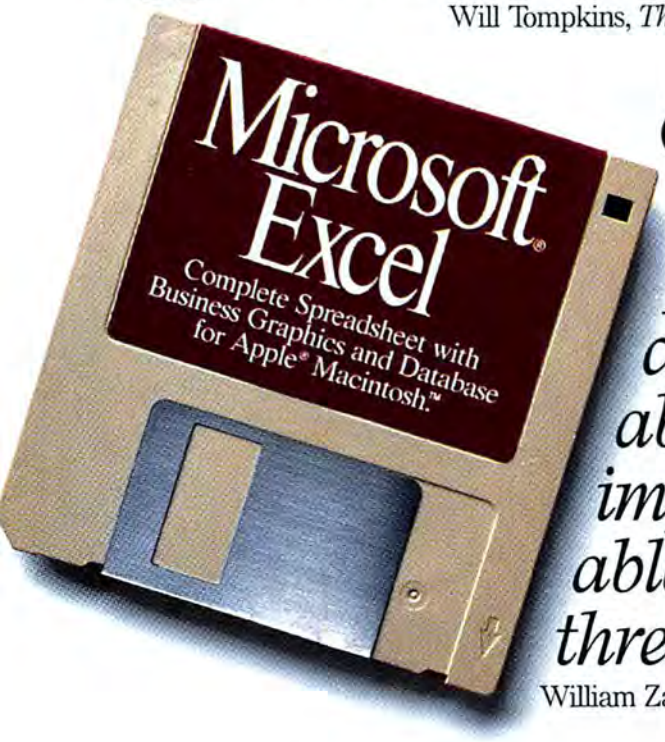
"In terms of features and ease of use, Microsoft Excel makes 1-2-3 look rather pale." *The Seybold Outlook On Professional Computing,* October 20, 1986

For the name of the nearest Microsoft dealer, call (800) 426-9400. In Washington State and Alaska, (206) 882-8088. In Canada, call (416) 673-7638.

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"Microsoft Excel is easy to learn, but better, it's also easy to use. Best of all, you can easily get at Microsoft Excel's powerful macro capability." Jerry Pournelle, *Byte*, April 1986

"Microsoft Excel has implemented the most all-inclusive and powerful use of linking yet seen in micro spreadsheets... It offers what appears to be an almost unlimited range of application possibilities."
Will Tompkins, *The MACazine*, Vol. 2, No. 10



"A powerful spreadsheet program with equally powerful data-base and charting (or graphics) capabilities, it offers substantial improvements over comparable PC-DOS programs in all three areas."
William Zachmann, *Computerworld*, December 8, 1986

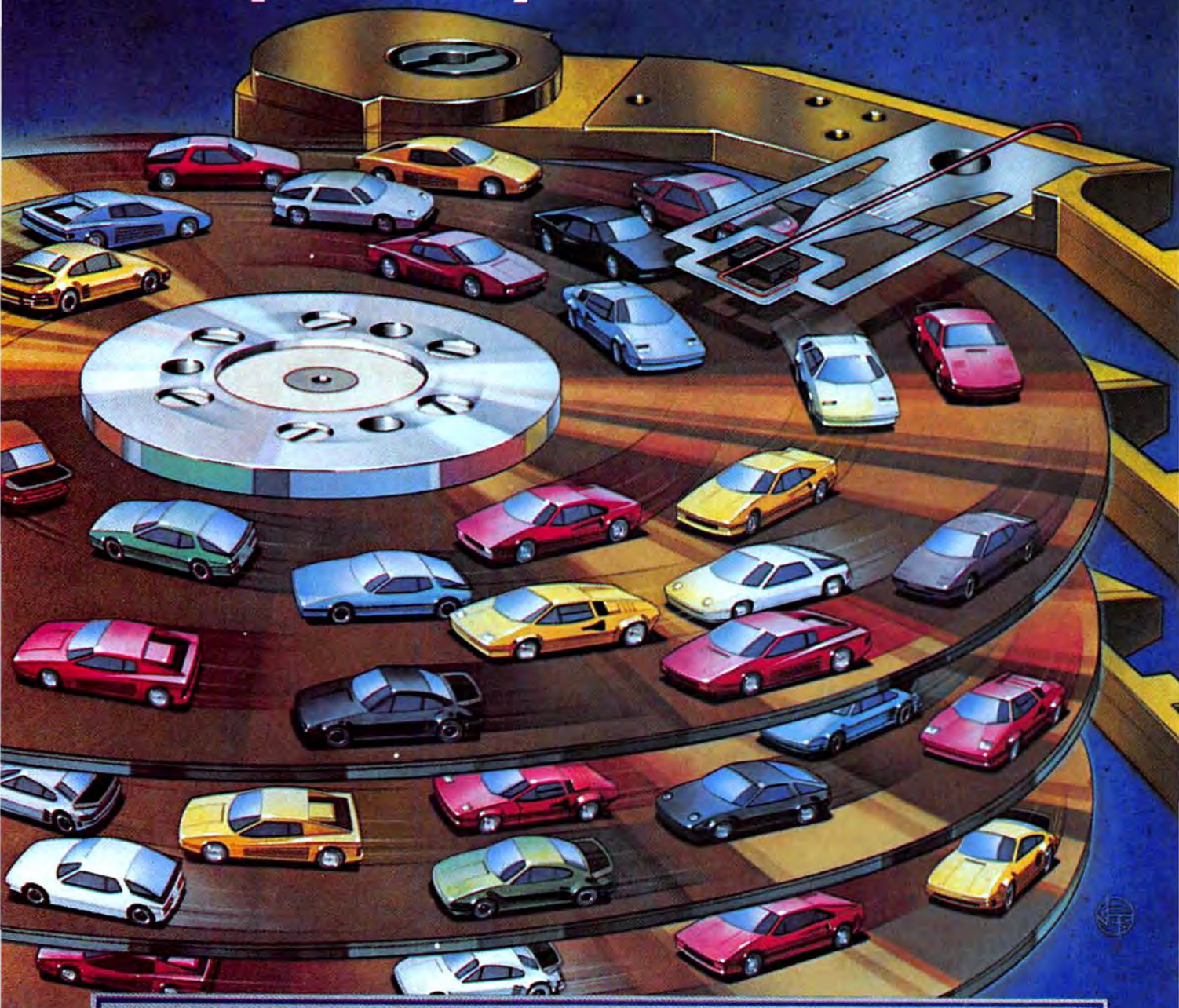
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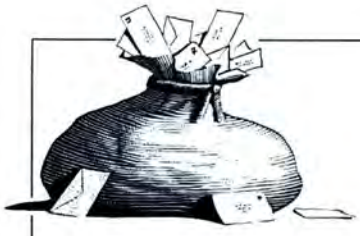
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We're always happy to hear from our readers, so keep sending your comments to Letters to the Editor, MacUser, *110 Marsh Drive, Foster City, CA 94404. All letters become the property of* MacUser *and we reserve the right to edit any letters that we print.*

CUTTING EDGE

Doug Clapp's comments regarding "Suits" (August, 1987) and their new buzz acronym, "DTP," were right on the mark. In the days of publishing, B.C. (Before Computers), "Suits" wouldn't have dreamed of taking over the company newsletter for fear of accidentally slitting their wrists with an X-Acto knife. They assume that just as clothes make the executive, hardware makes the graphic artist.

As readers of these publications can attest, nattily arrayed microchips do not an editor make. The actual result more closely resembles "Friday the 13th, Part VII: Jason Gets a Macintosh."

The problem is not that "Suits" do not understand Macintoshes; it's that they don't understand anything. Think about it. These are the same guys who littered our offices with all of those worthless, cumbersome IBMs.

SUSAN FORNEY
RICHLAND, WA

Let's not be too harsh on the Suits. They show real talent for acronyms.—LK

SHAREWARE CAN'T WAIT

We would like to publicly thank Alcoa for the $1200 shareware fee it recently paid for our programs *DiskInfo* and *miniWRITER*. This is the largest shareware fee we have received in the last 2 years, and the only sizable fee from any major corporation.

Shareware fees are collected voluntarily, on the honor system, and there is practically nothing our little company could have done if Alcoa had decided to use our products without paying for them. Major corporations sometimes suffer the reputation of being faceless and heartless entities. It is refreshing to see that this is not the case with Alcoa.

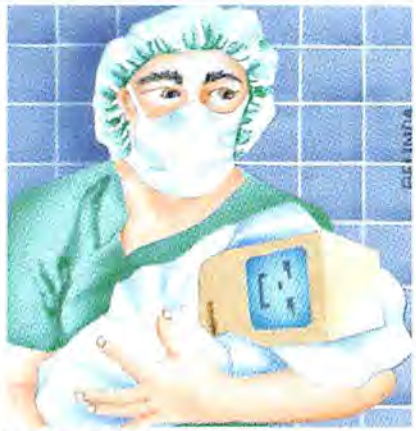
FORREST JOHNSON
MAITREYA DESIGN
GOLETA, CA

SOUNDS OF SILENCE

Is there any way to silence the fan on my Mac SE? It makes a dandy leaf blower on weekends, but the roar keeps my office partner awake during the week.

JIM BELL
OAK VIEW, CA

Well, Apple says no, the fan needs to be running as loudly and as fast as it does. However, we've heard of some cures. On at least the early SE powerboards, you'll find a place for a 3.3-volt Zener diode. It's not there, and a jumper wire is. If you remove the jumper and put in the diode, the fan will run much quieter. It will also move less air. We can't and don't recommend this procedure. At the very least, you'll void your warranty. You should write to Apple and protest. They'll respond if enough people write.—SB



COBOL CABAL

I am in a complete state of confusion. The Macintosh is supposed to be a business machine, yet it lacks the most widely used commercial data processing language, Cobol. In Chicago, Cobol is far more popular than Pascal, C or BASIC for business. So how come one has not been developed? Does this mean I have to get an IBM?

JOHN O'DONNELL
PALOS HEIGHTS, IL

We're still not convinced you should use such an anachronistic language, but we do know of at least one version of Cobol that runs on the Mac. It's called, appropriately enough, MacCobol, *and is available from MicroFocus, 2465 East Bayshore, Suite 400, Palo Alto, CA 94303.*—BT

ONE IS NOT ENOUGH

Is there anyone planning on using the one slot in the Macintosh SE as a connector to an expansion chassis? The portability of the SE is nice, but I know I'll want to have an accelerator card, a card to drive a large screen and much more as new products are introduced.

I want to have all of these things available at home and in the office while still having basic functions "on the road." If the connection for the expansion chassis could be on the accelerator card, I would probably never need to buy a Mac II.

MICHAEL BRUNER
LOS ALTOS, CA

Look for an expansion chassis or two before the end of the year (possibly by the time you're reading this). Most of the accelerator boards I've seen have connectors on both top and bottom, so, if there's space, you can shoehorn more than one board in. Also, several of the boards do more than one thing. For example, you can get both a 68020 and big screen support on the same Radius board.—SB

BUREAUCRATIC BLUNDERS

We take exception to the *MacUser* review of Infocom's *Bureaucracy* game by Douglas Adams. It is an excellent addition to Infocom's collection of comedy games.

The review states that the majority of puzzles have no clues and supplies the macaw puzzle to illustrate this point. The solution is to show the bird a painting. The author claims you have no reason to do so, but in fact there are two clues for this.

If the painting is of Reagan, the bird shouts anti-capitalist sayings. If the painting is Gorbachev, the bird shouts anti-communist sayings. However, there is a subtler clue to the bird's hostility to the painting: it has only one wing. When the painting is Reagan, the bird is left-wing; Gorbachev, right-wing.

The reviewer failed to observe these clues and surmised that none existed. Note that the absence of evidence is not evidence of absence.

ED FEWELL
DAN NOLAND
ALAN ANDERSON
KOKOMA, IN

NATURAL MAC BIRTH

Six months before I bought my Mac, I started buying *MacUser* each month. I feel like I went through pre-Mac-natal classes. I learned so much before my Mac came home, it was an easy "addition" to our family. No sibling rivalry either—they all have their own software that they enjoy.

Thanks for creating such a terrific magazine. It was to the delivery of my Mac what Lamaze was to the delivery of my kids.

SALLY JO THOMPSON
FOREST LAKE, MN

BELINDA MORRISSEY

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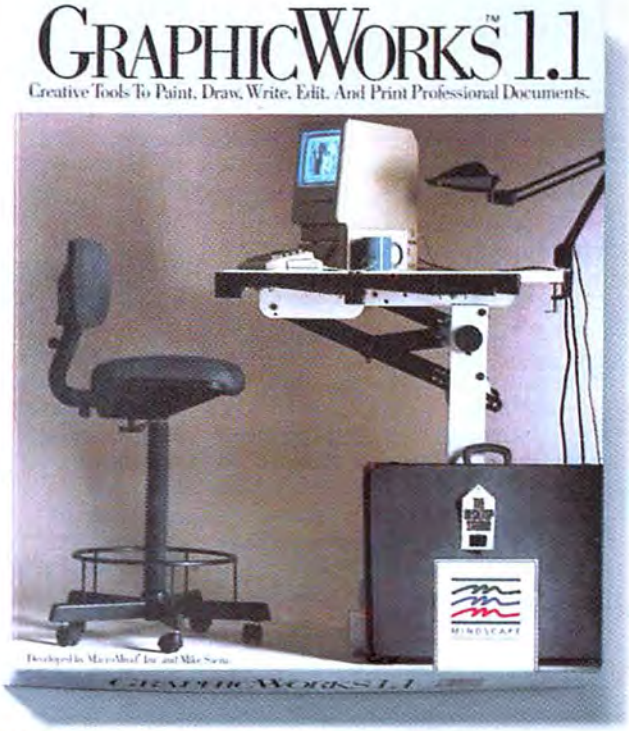
It's the only program that allows 300dpi (and above) full-page scanned-image editing. Its many unique features include full LaserWriter® support for scanned images and text, the ability to edit and manipulate bit maps as objects, and an unlimited number of Draw, Paint and Write layers. It even gives you ThinBits,™ allowing you to work on an entire image without the expense of a large-screen monitor.

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WYSIWYG is a fiction so long as the Mac displays QuickDraw and the LaserWriter prints PostScript.

FLYING OFF THE HANDLE

I am a Mac addict and have been since I stumbled into one (as in almost fell over) at a party given by a doctor friend of mine. Funny...he never invited me back, but that's not important. The fact is I'm hooked on Macintosh.

My true love is flight simulators. Fokker, Cessna, Learjet, Harrier, Space Shuttle—you name it, I've flown it! Except for one elusive F-16A Falcon from Spectrum HoloByte, advertised in your magazine 9 months ago. Where did they go? Where did it go? Are they just trying to torment this would-be aviator?

L. W. JOHNSON
SELAH, WA

Falcon *is now available for $49.95 from Spectrum HoloByte. Their new address is 2061 Challenger Dr., Alameda, CA 94501. (415) 522-3584.*—BT

A FRIEND IN PUBLISHING

In the article "Typecasting" (July, 1987) Gregory Wasson mentions the book *Pocket Pal*. I am unable to get any further information about this book at my local store or library. Can you please advise me on where I can purchase the book? Thank you.

GLORIA KRESCH
HAVERTOWN, PA

Pocket Pal, *an excellent book detailing the mechanics of publishing production and printing, is published by the International Paper Company. If your local book store can't get it then send $4.25 to Pocket Pal Book, PO Box 100, Church Street Station, New York, NY 10008-0100.*—BT

DUMP WYSIWYG

I would like to see a word processor for the Mac that is similar to AT&T's *troff* or like Donald Knuth's *TEX*. I know these aren't WYSIWYG, but they're substantially more powerful than any pseudo-WYSIWYG word processor available today.

I know a lot of fellow Mac fanatics will cry heresy, but I'm tired of the power that I must give up for the so-called WYSIWYG. WYSIWYG is a fiction so long as the Mac displays in QuickDraw and the LaserWriter prints in PostScript.

JASON PAUL DE MONT
CARLISLE, PA

AGE-OLD PROBLEM

I have a Mac SE with an internal hard disk. I work at home and use my Mac primarily for business. My five year old son, however, likes to play *MacPursuit* and a few of the games.

I would like to let him play on the Mac without my supervision, but am concerned that he will rearrange, remove or damage my business files. Do you have any suggestions?

VICTOR J. CHAVES
WESTPORT, CT

Utilities like MacSafe *and* 'Ncryptor *or desk managers like* Quickset *and* Top Desk, *to name a few, will password protect important files. Check our MiniFinders section for addresses. But be careful, Victor, before you know it those kids might grow up to be codebreakers.*—BT

REALITY SINKS IN

Perhaps John Dvorak hasn't been looking over his shoulder often enough. In the hinterlands of computerdom, the ladies are coming on strong. Over the last couple of years, I've worked with eleven computer professionals from a number of companies. Only three are male. Rather poor evidence here that the field is a men's club. From what I've seen, it's only a matter of time before His and Hers executive washrooms are routine.

DONALD B. HECKENLIVELY
HILLSDALE COLLEGE, MI

It's no doubt true that women are becoming more equally represented in all areas of the computer industry. However—speaking as one of them—the atmosphere still carries a strong whiff of the boys' club. It must be the anchovies.—LK

MAC II POOR IN SOFTWARE

Categorize this in the "Things We'd Like to See Department." To wit: A monthly feature on what works and what doesn't on the Mac II and the status of upgrades from the publishers of all the stuff we've come to know and love (alright, like a lot) on the previous

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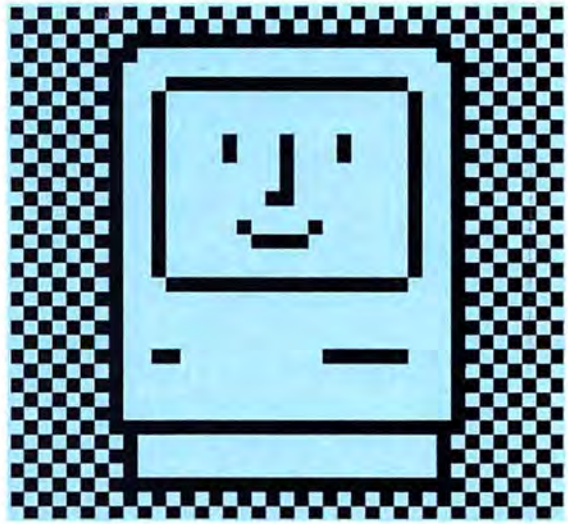
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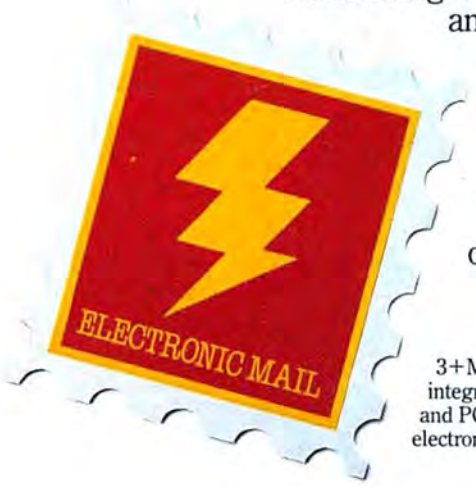
Now your Macintosh and PC files can actually reside in the same Macintosh folder and PC directory. And coexist with AppleShare servers on the same network.

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incarnations of the Macintosh.

I'm just getting to know my Mac II. For openers, *SuperPaint* doesn't work, although the word from my dealer is that a fix is coming. Neither does *Tempo* 1.1. My *JClock* didn't install, nor did *Macsbug*. *Toggle Keys* 1.1 corrupted my *System*. After installing, I couldn't boot directly from my hard drive.

LAWRENCE TARNOFF
PROVIDENCE, RI

We'll categorize it in the "Things You Didn't See Department." Try looking for your favorite Mac II compatible programs in the Updates box of the New On The Menu section.—BT

EXCHANGE RATES

Four friends of mine decided that the Macintosh is "The Computer," but they all bought AT clones instead. Why? Easy. Not one of them is a millionaire. The Mac is great and I use it for business, but it costs way too much for it to be "the machine for the rest of us." It's a Rolls Royce when a Chevy is needed.

In Montreal, I have been unable to find a 512E Macintosh (without a printer) for under $2500 Canadian. Yet I can get an AT clone with printer, monitor and high-res card for well under $2000C. Apple has a big problem.

No, I won't trade in my Mac Plus, but my sad experience is that many who are not Mac owners are going clone because they have only so much money.

DR. D. SCHAFFELBURG
MONTREAL, CANADA

SAFETY NET-WORK

I have been following the debate about Apple dealers with keen interest. I bought a Mac Plus, hard disk and ImageWriter II for an attractive price from a dealer who is now out of business.

I had no knowledge of this dealer's financial problems until the "Closed for Reorganization" sign appeared in the window. What do I do if a problem comes up? Do I have to buy another computer to get service?

I can understand a dealer not wanting to spend time and money servicing people who never have been or will be paying customers. That doesn't solve my problem, however. People who move after buying their computers also have this problem.

Perhaps the answer is a nationwide clearinghouse system of reciprocal dealers credits, analogous to the Federal Reserve banking system. Dealers who spend an unusual amount of time and

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Meeting Notes

The brainstorming session became the

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The Outline became the Proposal. The Proposal became the Business Plan. Each evolved naturally into the next. With MINDWRITE™ you can throw all your preconceptions about Outlining and into the Trash.

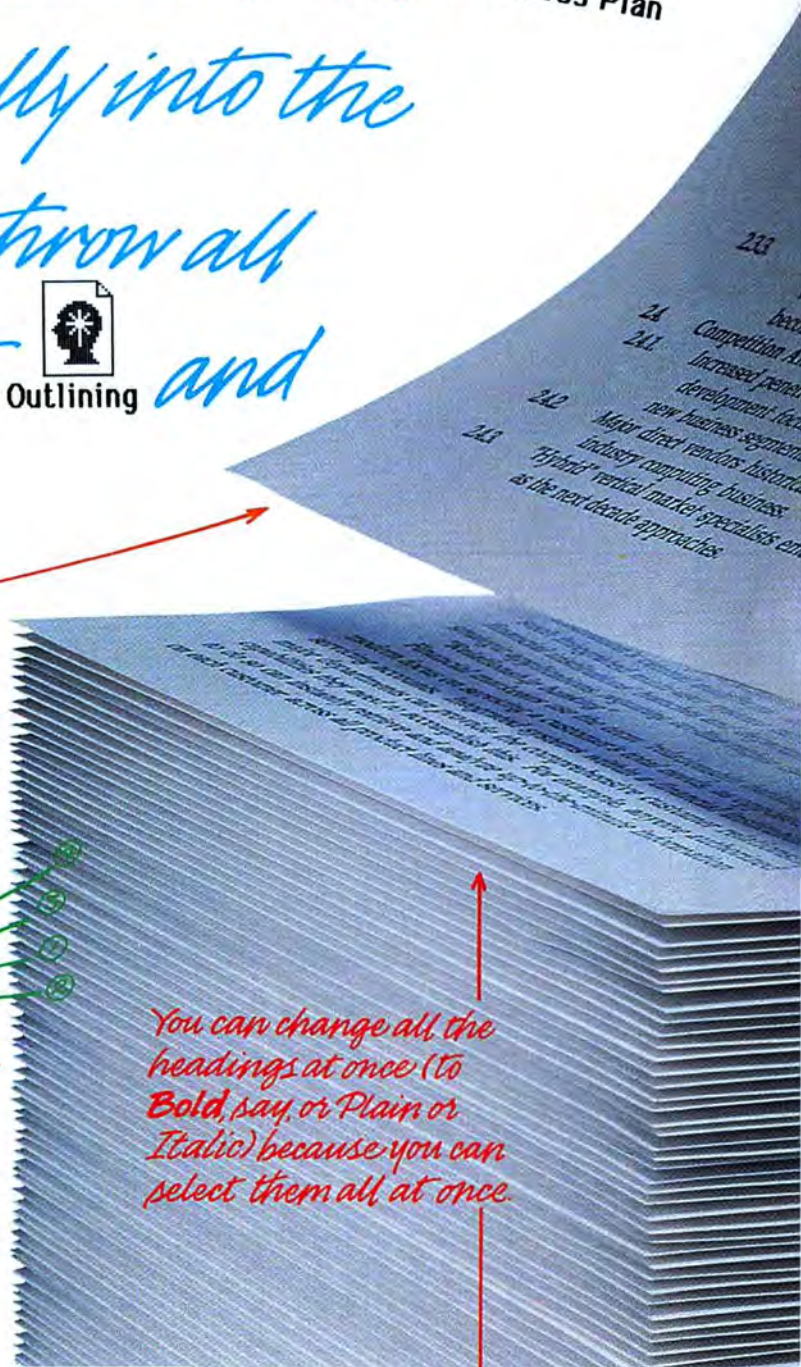
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money servicing customers one year would receive reimbursement. The same dealer might spend less than average the following year and be net contributors to the system.

ROBERT SPRAGUE
BERKELEY, CA

SPACE SAVERS

What I envision is a 1-megabyte disk. Do you see this as a possibility? I started with a 128K Mac and upgraded it to 2 megabytes. I reduced my boot-up time from 45 to 9 seconds. With this setup I have been able to run any of my applications using the same 9½ by 9½ inch desk space footprint. This is one third less space used by my associates who have IBM PCs. I do not want to invest in a hard disk and lose desk space.

A 1-megabyte disk would enable me to put all of my startup applications and document libraries on one disk. I can continue with my single drive and do all my work in the same 10½ inch by 13 inch box.

JACQUES GALE
CLAYTON, MO

The current 800K disks (which actually have about 780K of useful space) aren't too much smaller. And, yes, 1.6-megabyte floppies shouldn't be more than a year off. But why don't you get a hard disk that sits under your Mac? The footprint doesn't change and the screen is often raised to a better viewing angle. Such units come in 20- to 80-megabyte sizes and should cost between $700 and $2000. When the new 1.6-megabyte floppy drives arrive, they'll probably cost $400 to $500, plus you'll need new disks. Good, under-the-Mac hard disks are the PCPC MacBottom, Apple's own products and the Jasmine line. There are plenty of others, too. Take a look at the ads in this issue.—SB

WORD IS OUT

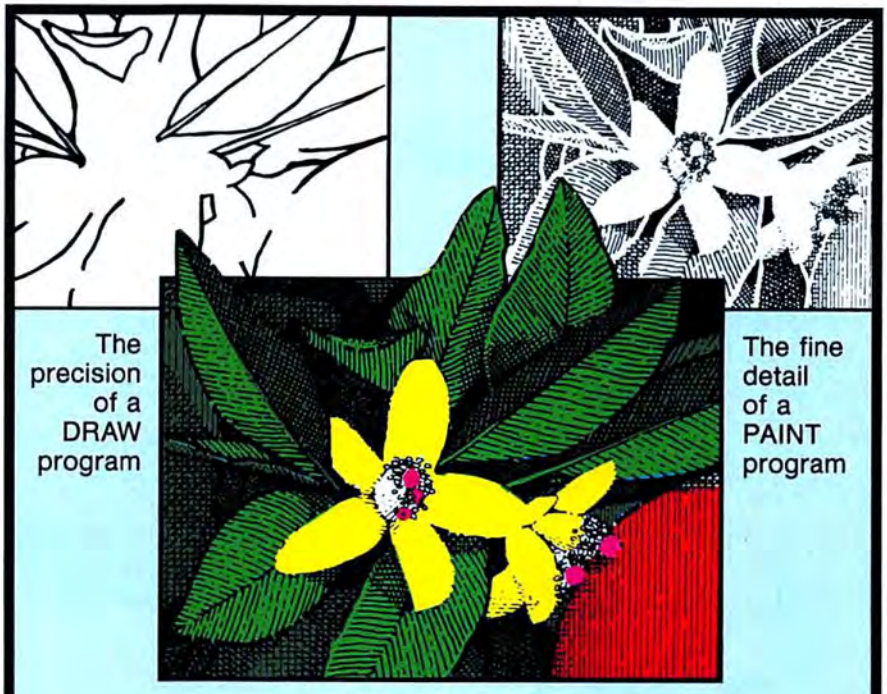
Why is it that the same Microsoft that could create *Excel* 2 years ago produces *Word* 3.0 today? What happened in between? The simple answer is the look-and-feel controversy over *Windows*. That'll teach Apple to stick its nose into Microsoft's MS-DOS product line. At least that's the message I get.

ANTHONY PAZQUEZ
BROOKLYN, NY

FREUDIAN SLIP?

Sigmund Freud would have labeled Mr. Dvorak's reaction to the new Mac as a classic case of "Mouse Envy."

DAVID W. QUINN
ONTARIO, CA



The precision of a DRAW program

The fine detail of a PAINT program

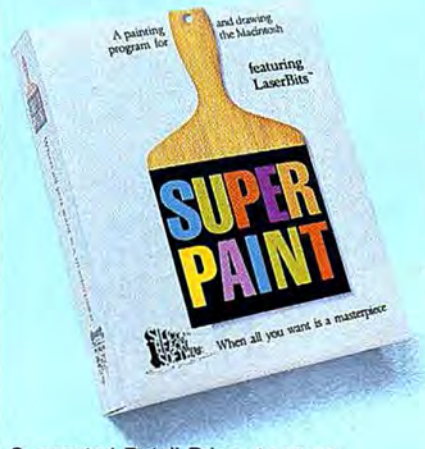
Now combined in

SuperPaint

Graphics for the Macintosh will never be the same again. Before it was paint or draw. One or the other. Now, nothing less than both will do. With SuperPaint, you can edit dot by dot in the PAINT layer and you can create and manipulate objects in the DRAW layer.

Until recently, paint programs only printed at 72 dpi. Now SuperPaint's unique LaserBits™ feature allows you to magnify and work on dots in the paint layer at an amazing 300 dpi resolution! These high resolution images can be pasted directly into your word processor or page layout program.

SuperPaint. When all you need is a masterpiece!



(compared to other paint programs) "SuperPaint is the clear winner and... MacPaint's heir apparent."
Adrian Mello, MacWorld, Jan '87

"SuperPaint is the hottest graphics package currently available."
Bob LeVitus, MACazine, Jan '87

"Is SuperPaint really super? Absolutely."
Sharon Aker, MacUser, Feb '87

Suggested Retail Price: $149.95

System Requirements:
Macintosh 512K, Plus, XL (1 mb)

*Macintosh is a trademark licensed to Apple Computer, Inc.
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- Supports multiple cassettes
- On-line "help" windows
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- Cables, terminator, cassette, tape software, and disk utility included



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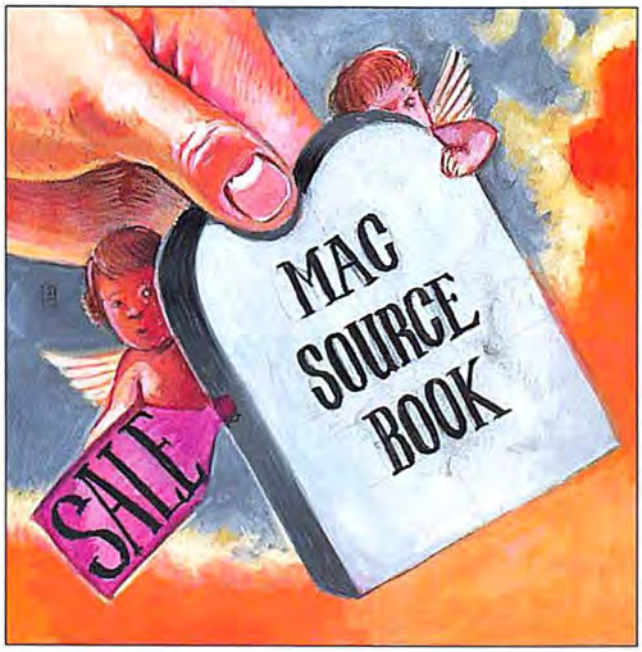
Social Responsibility

There are any number of data bases around to help investors figure out how to get the most for their money. Now there's one for investors who are as concerned with "how" as well as "how much." *EthInves* 1.3 (subtitled The Almanac of Socially Responsible Investing) tells you whether the company or fund you're considering for investment does business in South Africa—or whether a utility owns nuclear power plants. It also provides a list of the top 100 Defense Department contractors.

EthInves is shareware and is distributed as a *MacWrite* file. If you can't find a copy write to Jerry Whiting at PO Box 20821, Seattle, WA 98102, and enclose a check or money order for $10. If you aren't interested in where your money is going, you should be!—*LK*

The Price is Right

With the prices of software and hardware going up practically as we speak, it's nice to find something useful that's easy on the pocket. InfoBooks is offering Macintosh users a chance to get *The Complete Macintosh SourceBook* by Doug Clapp and Pat Ryall—originally published at $24.95—merely for the cost of postage. You'll get 400 pages of information which, if not up to the minute, isn't altogether stale news, either. If you're interested, send $4.00 to InfoBooks, PO Box 1018, Santa Monica, CA 90406. If you prefer to use plastic, give them a call at (213) 470-6786. There's a limited supply of books, so the quicker you take advantage of this offer, the better. Mention our name; it won't get you a discount, but it will make us feel good.—*LK*





GARY BUSS

HyperCard Hype

It's amazing! It's colossal! It's fast! What are you going to do with it? In all the hoopla surrounding Apple's announcement of Bill Atkinson's *HyperCard,* a few things seem to have been overlooked. You will need at least 1 megabyte to run the program in the first place—and Atkinson says 2 megs is better. It's going to be extremely difficult to run the program without a hard disk. And it ain't simple. This is no *MacPaint* that you can grasp the basics of by playing around with it.

Assuming you have a hard disk and lots of memory—are you going to devote your time to master *HyperCard*'s potential? Or will you just make do with whatever stacks come with the program? If you intend to spend your leisure hours developing stacks, we'd like to know about them. We'll give away a genuine *MacUser* Lab T-shirt—in your size, not the size shown here—to the five best stacks we receive. Send entries to Stacks of Stacks, c/o *MacUser,* 110 Marsh Drive, Foster City, CA 94404. Special stack receptacles have been designed and placed, waiting for the deluge of entries. The winning entries will be published on an upcoming *MacUser* utilities disk.—*LK*

Slipping Up

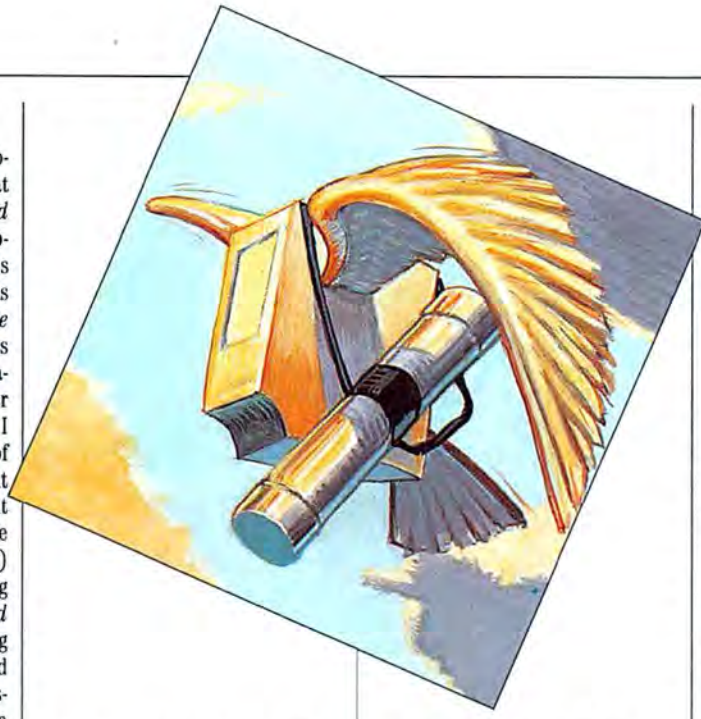
Every once in a while we mistake erroneous information for fact in reviews and print it. When this happens, we try to call your attention to them as soon as possible. As I am the author of one recent slip, I'll go first.

TONY LIMUACO

In "Tools of the Trade" (September 1987) I indicated that *Word Tools* worked with *Word* 3.0 files. According to the publisher, Aegis Development, this is incorrect. *Word Tools* works only with *Word* 1.05, *MacWrite* and ASCII files. There appears to be nothing in the documentation that specifies a particular version of *Word*, but certainly I should have been more aware of what version I was using. At least. (The actual word count appears to work, but none of the suspect checking is supported.)

Aegis is actively encouraging suggestions for improving *Word Tools*. They're currently working away at adding new features and eliminating old bugs, and registered owners will be notified of a free upgrade.

It has also been called to our attention that in "It's Elementary" (August 1987), the reviewer took Great Wave's *TimeMasters* program to task because *MacInTalk* operations take precedence over—and slow down—everything else. Since it is the nature of *MacInTalk* to do this wherever it is used, this can't be taken as a legitimate criticism.



TONY LIMUACO

A number of schools use *TimeMasters* to teach time concepts to younger children without any apparent problems.

Please continue to keep us on our toes by pointing out any errors you find. We can't promise to greet the news with cheering, but we always appreciate the opportunity to make sure our readers are getting the best possible information.—*LK*

Mac to Fax (and Back)

A new software/hardware combination from Mystic Valley Research in Mt. Vernon, NY lets your Macintosh access fax machines and bureaus across the country (last count, 2,000,000). MaxFax will also do mail merges, store messages on a central mainframe (thus freeing up your computer), send messages automatically at night when the rates are lower and access any other Mac with MaxFax at a 9600-baud rate.

The company claims that MaxFax' digitally encoded images are much clearer than those of a regular fax machine. You can receive a document, edit it and re-send with no drop in quality. Messages are received in the background, so you can get them without interrupting whatever you're doing at the time.

If you don't know anyone with a fax machine, not to worry. MaxFax comes with an exclusive data base of 85,000 names and fax numbers.

If you do a lot of business through fax machines or telecommunications, this product could save you time and aggravation—not to mention cash. For more information about MaxFax and its availability, get in touch with Mystic Valley Research, 44 Forster Ave., Mt. Vernon, NY 10552. Or give them a call at (914) 699-0200.—*LK*

RUMOR MANAGER

The *HyperCard* revolt we reported last month continues to spread. Rebellious developers actually held meetings on the floor at the recent Boston show. The rebels did suffer a setback when their organizing committee discovered the best way to record their information and coordinate their activities was with a rather large *HyperCard* stack.

The practice of catalog and retail dealers charging for editorial mention and favorable position in their materials is unfortunately on the increase. If you see what seems to be a great review in a catalog or a super special deal at your dealer's, you owe it to yourself to double check everything. More than ever, *caveat emptor* rules.

Our regular check of the Apple engineering department trash turned up several interesting items this month. First, Apple folks, you have to get some real shredders. They'll make our job somewhat harder, but we gotta tell you: Scissors just don't cut it fine enough. Now for the results: Along with the assorted laser printers due to be released next year, look for an entirely new technology printer. This unit, sort of a combination thermal and ink jet design, will be made entirely in the United States. The Toshiba/ImageWriter LQ incident, still not resolved at press time, really shook up Apple. Also look for an optical storage system, with approximately half a gigabyte of memory. On the software scene, a new (according to the memos we read) word processor should be available around June. This *MacWrite Plus* type program can be found here and there under the code name *Eddie*.

Bill Atkinson has already turned his attention to a new product. He promises that you'll get it in less than 3 years.

Apple is hustling to complete their own version of an infrared computer-to-printer link. The way these handy devices work (at least on those non-Apple units we've had in our labs) involves plugging an add-on hardware device into both Mac and printer. The current software still works (surprisingly enough). While the next generation of Macs (one current code name is Zap Machine) will have built-in infrared-out capability, current units will all require the hardware add-on box, even in Apple's implementation. However, all Apple brand printers (except the wide carriage ImageWriter—soon to be dropped, if it hasn't been already) should be able to receive infrared early next year. Look for a small E.T.-like receiver head sticking out the top. These devices currently have a range of 10 to 20 feet and projected costs of $200 to $400! We hear that Apple is shooting for $500 or less.

The prototype DAT (digital audio tape) backup machine (we're talking 1.2 gigabytes per tape) that we've been trying out is awesome. And, if you need to back up a lot of material, cheap. No prices yet, but early street cost should be under $2500.

Have you heard any good rumors recently? Can you share them? Does your legal department agree? Will you share them anyway? If we use your rumor we'll send you a token of our appreciation and promise not to use your name. Anonymous contributions also accepted. Contact the Rumor Manager by snail mail care of *MacUser*, 110 Marsh Drive, Foster City, CA 94404, or, better yet, electronically. Right now we can be reached on MCI Mail (MacUser), CompuServe (72257,2671) and AppleLink (X0259).

The Mac Coat of Arms

One of the most interesting clip art disks received is Pleasent Graphic Ware's Heraldry disk. It's more than just art to use in creating (or recreating, if you already know what it looks like) your personal coat of arms. The Heraldry documents also contain a wealth of information about the art and shapes that are provided. If you print out and study all the documents you'll acquire a good knowledge of the forms that appear on coats of arms. Two kinds of documents are provided. The first shows and explains the basic forms like chevrons, piles and shakeforks, while the other type has many varied objects from different fields to integrate into your work.

Aside from helping heraldry buffs this disk should appeal to fantasy game players, where a good coat of arms is often a necessity.

For more information on obtaining this disk contact Pleasent Graphic Ware at PO Box 506, Pleasent Hill, OR 97455. Their phone number is (503) 741-1401.—*SB*

MISS NG PIEC S

This handy chart comes to us from the *Miss ng Piec s* newsletter, written, edited and published by Robert Art Morgan, who refers to it as "the world's first 'Share Rag'." We'll be bringing you more of the same as a regular New on the Menu feature. If you'd like to subscribe to the newsletter, which has even more information, the price is $1 a copy or $12 annually. Write to Robert at Ramifications Unlimited, PO Box 619, Dept. MP1.2, Julian, CA 92036.—*LK*

Paint Program "Band-Aids"

1. Public Domain HELP files are available for *SuperPaint.* Use *PD HELP* DA to create your own for *FullPaint, MacBillboard* and *LaserPaint.*

2. Use DublClick's *Art RoundUp* 1.1 as a way to open and manipulate a second Paint file with *MacPaint, GraphicWorks, MacBillboard* and *LaserPaint.*

3. Use Scrapbook as a way to import PICT files to *MacPaint, FullPaint, GraphicWorks* and *MacBillboard.*

4. Berkeley System Design's *Stepping Out* will provide a way to edit ShowPage View in *MacPaint, SuperPaint* and *FullPaint. Stepping Out* also provides 15 levels of FatBits for all Paint programs.

5. Use CE's *MockWrite* or similar DA text processor to enter, edit and proof text before Pasting into Paint programs like *MacPaint, FullPaint* and *MacBillboard. Thunder* spell checker DA can even be used with *MockWrite.* Text box can be resized at time of Paste.

6. T/Maker *Click Art Effects* will add 1-degree Rotate, Skew, Distort and Perspective to *MacPaint.*

What About MacCalligraphy?

Enzan Software's *MacCalligraphy* is a unique program. It is a Japanese interpretation of *MacPaint.* Designed to mimic the ancient brush techniques, it lacks all the advanced features of the *Full-, Super-, Laser-* "Paint" programs. In fact, if it had appeared in the chart, it would have had all the ✓'s! However, the only advanced Paint program that came close to *MacCalligraphy*'s "real" brush behavior was *LaserPaint.*

✓ - missing feature

Paint Programs —What's Missing

	Mac Paint 1.5	Super Paint 1.0	Full Paint 1.1	Graphic Works 1.1	Mac Billboard 4.01	Laser Paint 1.1	Scoop 1.0
ONLINE HELP		✓				✓	✓
UNDO FEATURE USUALLY WORKS						✓	
MULTIPLE FILES OPEN	✓			✓	✓	✓	
MULTIPLE PAGE LAYOUT	✓	✓	✓				
AUTO ADJUST TO BIG SCREEN	✓		✓	✓	✓		
OPEN PICT	✓		✓	✓	✓		
OPEN TIFF	✓	✓	✓		✓		
HAND SCROLL				✓	✓	✓	✓
AUTO-SCROLL W/TOOLS	✓		✓	✓			
AUTO-SCROLL W/SELECT	✓			✓		✓	
MULTILEVEL FATBITS	✓		✓				
EDIT SHOWPAGE VIEW	✓	✓	✓			✓	
HIDE &/OR MOVE PALLETS	✓				✓		
LANDSCAPE ON-SCREEN	✓	✓	✓		✓		
EDIT TEXT AFTER TYPED IN	✓		✓		✓		
VARY TEXT STYLES WITHIN BLOCK	✓	✓	✓		✓		
FULLY JUSTIFY TEXT	✓	✓	✓	✓	✓		
RESIZE TEXT BLOCKS	✓		✓		✓		
RULERS	✓				✓		
MOVE ZERO POINT	✓	✓	✓		✓	✓	
GRID ALIGNMENT					✓		
AIRBRUSH ADJUSTABLE	✓	✓	✓				✓
MASKING	✓	✓	✓	✓	✓		✓
ROTATE BITMAP GRAPHICS BY 1°	✓				✓		
SKEW, PERSPECTIVE, DISTORT	✓				✓		
FILL AREAS BEYOND WINDOW	✓		✓				
TRACE EDGES		✓				✓	✓
DRAW OVALS/BOXES FROM CENTER	✓		✓	✓	✓	✓	✓
TWO-DIMENSIONAL LINE WIDTH	✓		✓	✓	✓	✓	
OBJECT LEVEL DRAWING	✓		✓		✓		
SAVE IN PICT FORMAT	✓		✓		✓		✓
300 DPI EDITING	✓		✓		✓		
QUALITY PRINT LASER FONTS	✓		✓		✓		

EUREKA: The Solver: Solves your mathematical equations instantly



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1. Enter your equation into the full-screen editor
2. Select the "Solve" command
3. Look at the answer
4. You're done

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- Evaluate your solution
- Plot a graph
- Generate a report, then send the output to your printer, disk file or screen
- Or all of the above

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You can key in:

- ☑ A formula or formulas
- ☑ A series of equations—and solve for all variables
- ☑ Constraints (like X has to be < or = 2)
- ☑ A function to plot
- ☑ Unit conversions
- ☑ Maximization and minimization problems
- ☑ Interest Rate/Present Value calculations
- ☑ Variables we call "What happens?," like "What happens if I change this variable to 21 and that variable to 27?"

Eureka: The Solver includes

- ☑ A full-screen editor
- ☑ Pull-down menus
- ☑ Context-sensitive Help
- ☑ On-screen calculator
- ☑ Automatic 68881 math co-processor chip support
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- ☑ Ability to generate reports complete with plots and lists
- ☑ Polynomial finder
- ☑ Inequality solutions
- ☑ Supports Macintosh II color monitor

Minimum system requirements:
Any Macintosh with at least 512K.

*Introductory price

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Buy This Book

It's 754 pages long and an impressive one and seven eighths of an inch thick and an absolutely essential part of Apple's recently released *HyperCard*. It's Danny Goodman's stunning new book, *The Complete HyperCard Handbook*. Danny was able to work with *HyperCard*'s creator during development (check out *HyperCard's* About... box) and has created a manual that will tell you far more about *HyperCard* than the rather sterile Apple manual. Here you'll be taught not only how to use the program, but how to create your own stacks. And you'll gain many insights on ways to use this new and exciting technology. *HyperCard* without *The Complete HyperCard Handbook* is not complete.

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UPDATES

Programs, like people, change over time. To get the most out of your programs, you should be using the most recent versions. Here's a list of the current version number (as of press time) of many popular programs. The version number of a program can usually be found by running the program and checking the About... item at the top of the Apple menu.

Apple System software is special. Generally, and unless you have a 128K Mac, you should be running *System* 4.1. and *Finder* 5.5 (128K owners should continue to use *System* 2.0 and *Finder* 4.1). If you don't have the latest *System* and *Finder* you can get them free from an authorized Apple dealer. Be sure to bring in a blank disk or two, though. A full Apple-supplied compatibility chart appears in the "The Help Folder" in the September issue.

All programs listed here are HFS compatible. The meanings of the codes in the right column are as follows: CP or NCP, copy protected or not; //, programs we have found to be Mac II compatible (this is not a comprehensive list yet); S, shareware (try before you buy software); and 5, requires at least 512K of RAM.

A.A.I.S. Prolog	M1.15	NCP,5
Acta	2.0	NCP,//
AMS General Ledger	2.08	NCP
AppleShare	1.1	NCP
Aztec C	1.06H.1	NCP
Back to Basics	1.03	NCP
Balance of Power	1.03	CP
Bulk Mailer	3.0	NCP,5,//
Business Filevision	1.1	CP
CalendarMaker	3.0	NCP,S
Chooser	3.1	NCP
ClickArt Effects	1.01	NCP,//
Clipper	1.01	NCP
ColorChart	1.3	NCP
ColorMate	2.1	NCP
ColorPrint	2.03	NCP
ComicWorks	1.0	NCP,//
ConcertWare+	4.0	NCP,//
ConcertWare+MIDI	4.0	NCP,//
Copy II Mac	7.0	NCP
Copy II Hard Disk	7.0	NCP
Cricket Draw	1.2	NCP,//
Cricket Graph	1.2	NCP,5
Deluxe Music Construction Set	2.0	CP
DesignScope	1.14	NCP,5,//
Disk Express	1.10	NCP,5
Disk First Aid	1.0.1	NCP,5
DiskInfo	1.45	NCP,S
Disk Ranger	3.0	NCP
DiskTop	3.0	NCP
Dollars & $ense	1.4	NCP,//
Easy3D	1.01	NCP
Edit	2.1	NCP
ExperCommon Lisp	2.2	NCP,5
ExperLisp	1.5	NCP,5,//
ExperLogo	1.1	NCP
EZ Draft	2.0	NCP,5,//
Fedit Plus	2.0	NCP,//
FileMaker	1.0	NCP,//
FileMaker Plus	2.0	NCP,//
Filevision	1.0	CP
Finder (MFS-128K)	4.1	NCP
Finder (HFS)	6.0	NCP,5
FlashBack	1.4	NCP
Flight Simulator	1.0	CP
Fokker Triplane	1.0	CP
FONTastic	2.7	NCP
Font/DA Mover	3.5	NCP
Fontographer	2.3	CP,5
Forecast	3.0	NCP,5
Frame Mac	1.1	NCP,5,//
FreeTerm	2.0	NCP,//
FullPaint	1.0	NCP,5
Gato	1.42	CP
Glue	1.04	NCP
GraphicWorks	1.1	NCP
Hard Disk 20	1.1	NCP,5
Hard Disk Utility	2.0	NCP,5
Helix	2.0r11	NCP,5
Helix, Double	DH1r35	NCP,5,//
HFS Backup	2.01	NCP,5
HFS Locator Plus	2.0	NCP
Illustrator	1.0	CP/ NCP,5,//
ImageWriter	2.6	NCP
ImageWriter, AppleTalk	2.6	NCP
InBox	2.0	NCP
Insight GL	1.0	NCP,5,//
InTalk	2.11	CP
Jazz	1A	CP,5
JustText	1.1	NCP,5
Laser Author	1.3	NCP,5,//
Laser Prep	4.0	NCP
LaserShare	1.0	NCP
LaserSpeed	1.5	NCP,//
LaserStatus	2.0	NCP
LaserWriter	4.0	NCP
Layout	1.3	NCP,S
Legal Billing	1.72	NCP,//
Legal Billing II	2.39	NCP,5,//
Lightspeed C	2.01	NCP
Lightspeed Pascal	1.0	NCP
Lode Runner	1.0	CP
Mac-3D	2.1	NCP
MacASM	2.0	NCP
MacBillboard	4.01	NCP,S
Mac C	5.0	NCP,//
MacCalc	1.2	NCP
Mac Disk Catalog II	2.1.1	NCP
MacDraw	1.9	NCP
MacDraft	1.2a	NCP
MacFlow	1.02	NCP
MacGolf	2.0	CP
MacInTalk	1.1	NCP
MacInUse	2.0	NCP,//
MacLabeler	2.2	CP
MacMoney	2.02	NCP
MacMovies	1.02	NCP
MacNosy V2	2.55	NCP
MacPaint	2.0	NCP
MacPalette	1.0	CP
MacPascal	2.1	CP
Mac +][	3.0	NCP
MacProject	1.1	NCP
MacProof	2.0	NCP
MacSafe	1.03	CP
MacServe	2.1	CP,5,//
MacSpec	1.3	CP
MacSpin	1.1	CP
MacSpool	2.1	NCP
MacTerminal	2.2	NCP
MacTools	7.0	NCP
MacWrite	4.6	NCP
Mac Zap Copier	4.52	NCP
MailManager	1.0	CP
MapMaker	2.0	NCP
MDS	2.0	NCP
Measure Test	11.4	CP,S,//
Megamax C	3.0	NCP
MicroPhone	1.1	NCP,//
Micro Planner Plus	5.8	CP
MindWrite	1.0	NCP
miniWriter	1.39	NCP,S
MockPackage+	4.3.4	NCP,S
MORE	1.1C	NCP,//
MPW	1.02	NCP,5
MS BASIC	3.0	NCP
MS BASIC Compiler	3.0	NCP
MS Chart	1.0	CP
MS Excel	1.04	NCP,//
MS File	1.05	CP
MS Fortran	2.2	CP
MS Word	3.01	NCP
MS Works	1.0	NCP
Multiplan	1.1	NCP,//
MusicWorks	1.1	CP
myDiskLabeler	2.11	NCP
Neon	2.0	NCP
Omnis III Plus	3.24	CP,//
OverVUE	2.1	NCP,//
PackIt III	1.3	NCP,S
PageMaker	2.0a	NCP,5
Parameter Manager	1.092	NCP
PictureBase	1.2	NCP
Plains and Simple	4.1	NCP,5,//
PowerStation	1.1	NCP,5
Profit Stalker II	1.3	NCP
Project Billing	3.0	NCP,5,//
QUED/M	2.0	NCP
Quick & Dirty Util., Vol. 1	1.6	NCP
Quick & Dirty Util., Vol. 2	1.1	NCP
Rags to Riches	3.0	CP,//
RagTime	1.1	CP,//
Ready, Set, Go! 3	3.0	NCP,//
Record Holder	2.1	NCP
REdit	1.2	NCP
Red Ryder	9.4	NCP,S
Reflex	1.01	NCP
ResEdit	1.1d12	NCP,//
Sargon III	1.0	CP
SideKick	2.0	NCP
Silicon Press	1.1	NCP
Slide Show Magician	1.3	CP
Smartcom II	2.2B	NCP,//
SoundCap	4.4	CP
SpellNow	1.0	NCP
Spellswell	2.0	NCP
StatView 512+	1.1	NCP
StatWorks	1.2	NCP,//
Stella	1.3	CP,5,//
Straight Talk	2.08	NCP,//
Studio Session	1.4	CP
SuperPaint	1.00	NCP,5,//
Switcher	5.1	NCP,5
System (MFS-128K)	2.0	NCP
System (HFS)	4.1	NCP
Telescape Pro VT100	1.0	NCP
Tempo	1.1	NCP
ThinkTank 512	1.3	NCP
Thunder!	1.0.1	NCP
ThunderScan	3.4	NCP
TML Pascal	2.01	NCP
TMON	2.8	NCP
Top Desk	2.3	CP
Turbo Maccountant	2.0	NCP,//
Turbo Pascal	1.0E	NCP,//
VersaTerm	3.0	NCP
VersaTerm Pro	2.0	NCP
VideoWorks	1.1	NCP
VIP	2.0	NCP
Widgets	2.0	NCP
WriteNow	1.0	NCP,//
XPress	1.04	CP,5
ZBasic	3.03	NCP

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All products require a Macintosh with at least 512K

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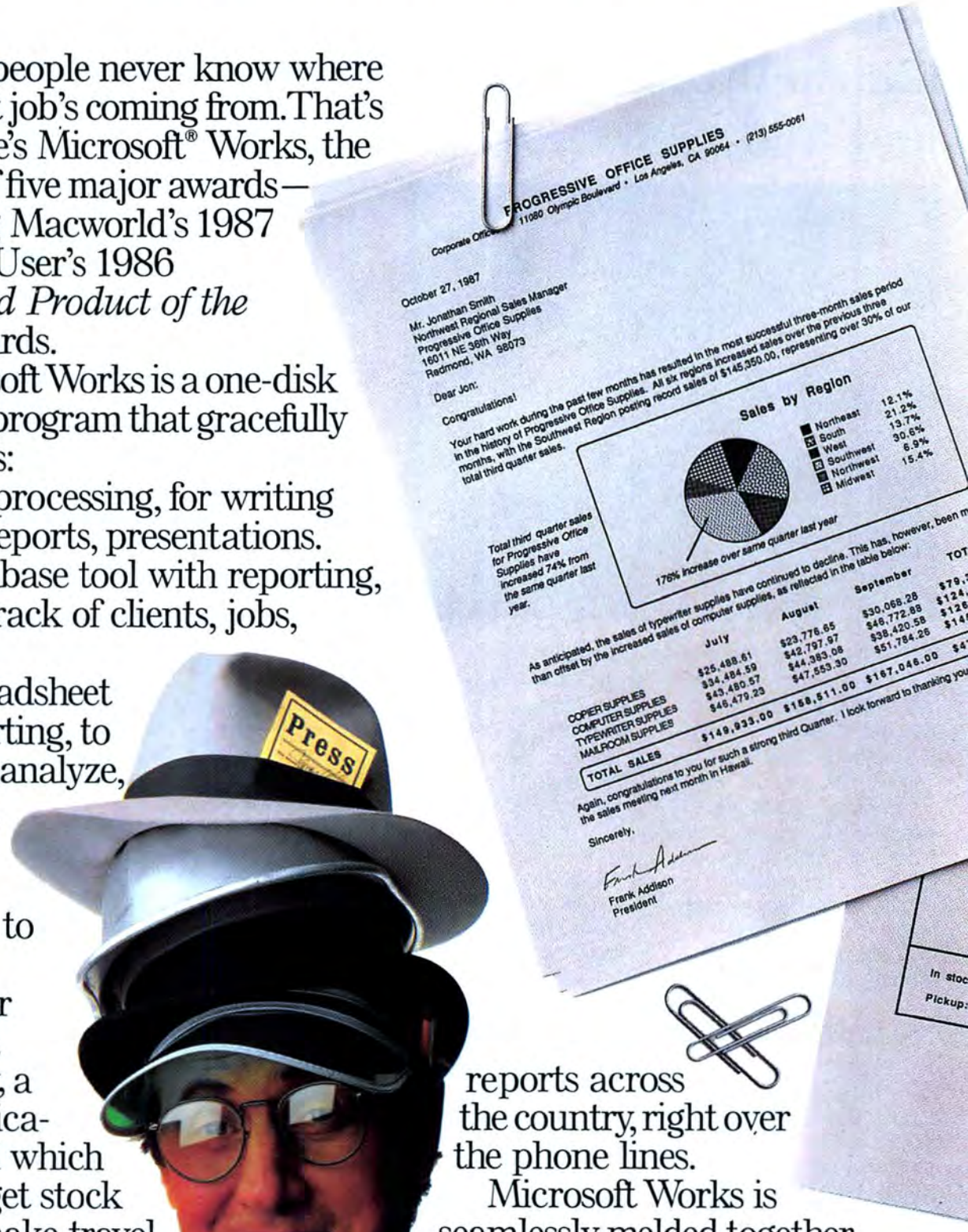
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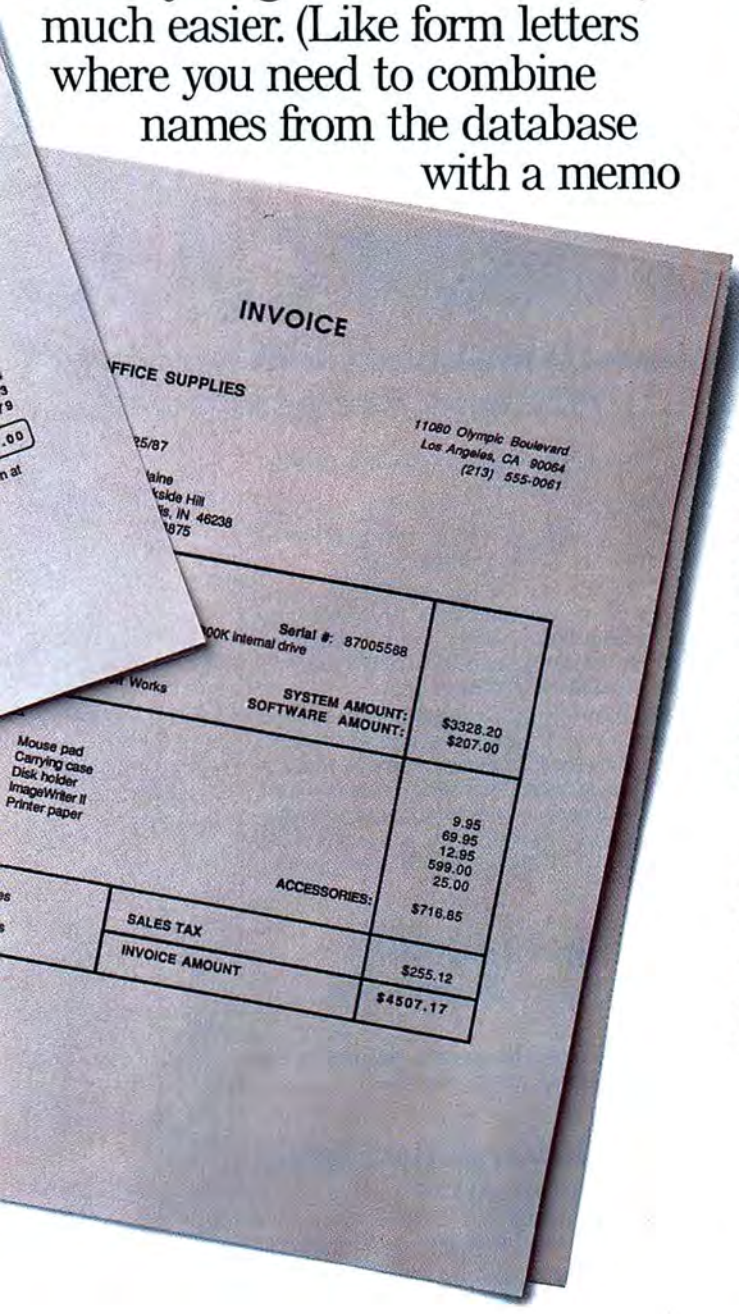
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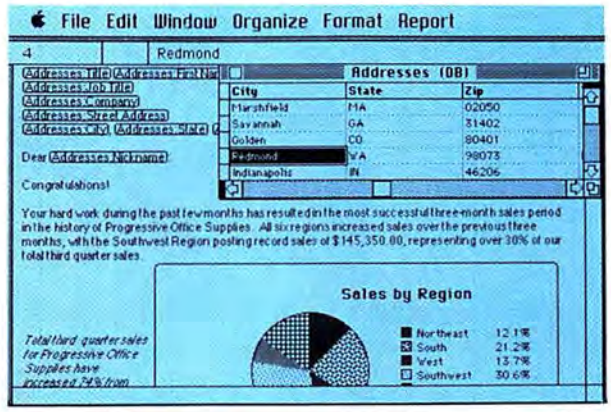


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Flat on its Back

Microtek brings high-resolution flatbed scanners within the means of small to medium desktop publishing outfits. The $1895 MSF-300C is designed like a photocopier so artwork lays flat instead of being rolled around a drum. Books and other bulky originals of up to 8½ by 14 inches long can now be digitized with ease.

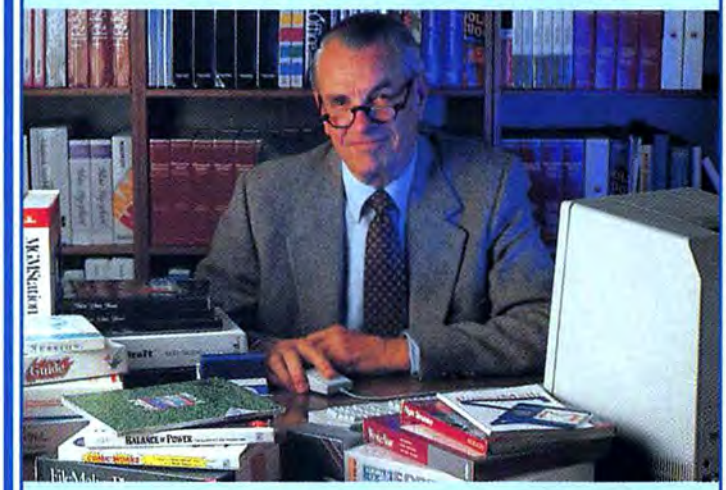
The 300 dot-per-inch scanner comes with the greatly improved *VersaScan Plus* software. Microtek has added Paint features to the program so an image can now be extensively manipulated after it is digitized. *VersaScan Plus* distinguishes line art (text, for example) from halftones (photographs), and you can freely mix the two modes by defining windows within a page.

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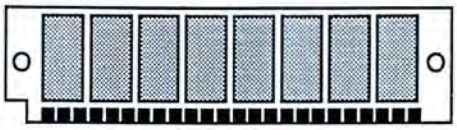
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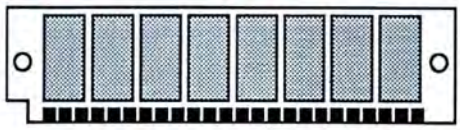
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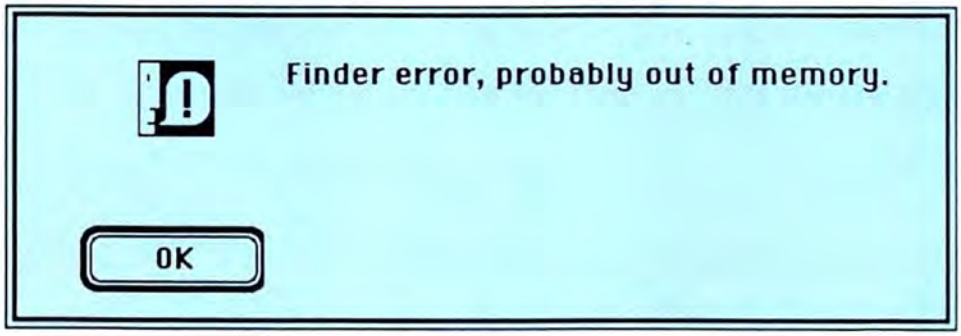
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DIALOG BOX OF THE MONTH



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Todd Trumbull of Roseville, CA found this dialog and supplied the description. He also created his signature in *MacPaint*. We'd like to thank Todd for both his contributions and kindly suggest to him that he has more of a future as a writer than an artist.

If you, too, would like a brief moment in the *MacUser* spotlight, send us the most interesting and unusual dialog box that you find. If we agree, we'll publish it, complete with your name and hometown, and send you a check for $25. Keep your finds on a disk for a while. If we pick yours, we'll ask you to send us the file, so we can print it at our offices. Remember, COMMAND-SHIFT-3 stores the screen image on the startup disk as a *MacPaint* file.

Send your potential tickets to fame to Dialog Herb, c/o *MacUser*, 110 Marsh Drive, Foster City, CA 94404. No calls please.—*H. D. Plant*



TONY LIMUACO

Heard Any Good Stories Lately?

Do you want to write for *MacUser?* If you do please contact us by mail (either electronic or snail). The person you should be directing your queries to is Louise Kohl, our Executive Editor. Her addresses are 110 Marsh Drive, Foster City, CA

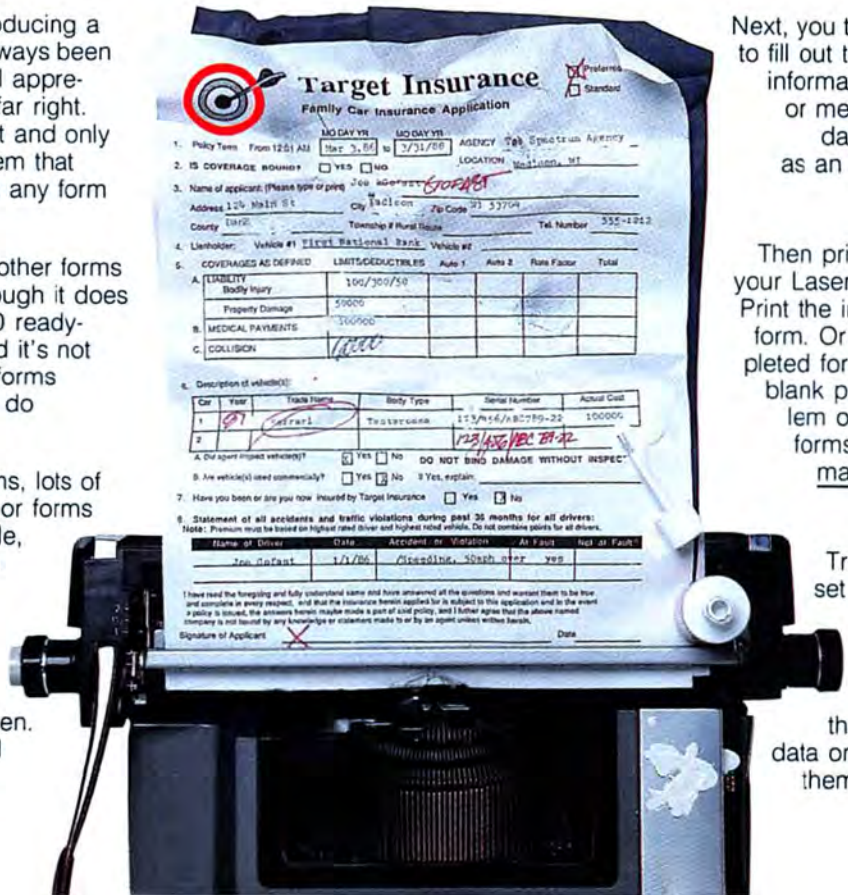
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BUG OF THE MONTH



John S. Sell of Trenton, NJ has reported the following "interesting" bug in *Microsoft Works.* John is an employee of the New Jersey State Department of Environmental Protection (no, that's not a joke). Part of his job responsibilities are to keep track of samples submitted to the Department's support laboratories. After entering one month's data into a *Works* spreadsheet he decided to try to locate a particular sample by using the Select, Find Cell function. That's when the bug was discovered.

Searching for a sample number that was not part of a sequence worked fine, but many of the sample numbers are sequential. And a search for a number high in a sequence will not work. The search always ends when the first number in the sequence is encountered. This problem only occurs when searching for a number five digits (or longer) in length. The search function works correctly on numbers that have up to and including four digits.

John informed Microsoft of his find and they confirmed it (telling him he was the first to report it) as did we. He was using *Works* 1.0, *Finder* 5.5 and *System* 4.1, all running on a Mac Plus with a DataFrame 20 hard disk attached.

Have you found any worthy bugs recently? Once a month we'll pick the best bug submitted and print all the gory details. We'll also send the bug finder a check for $25.

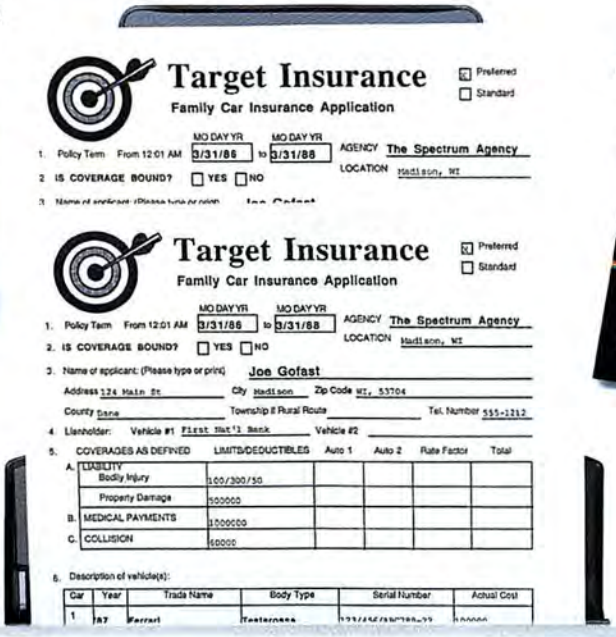
Send your bugs, carefully wrapped, of course, to Bugsy, c/o *MacUser,* 110 Marsh Drive, Foster City, CA 94404. Be sure to include all the details, including what *System* and *Finder* were being used when you found it and anything unusual about your software and hardware (besides the bug), so we can recreate it.—*H. D. Plant*

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Mac The Knife, MacWeek

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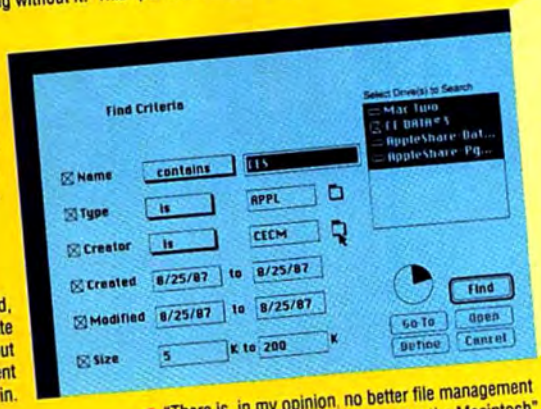
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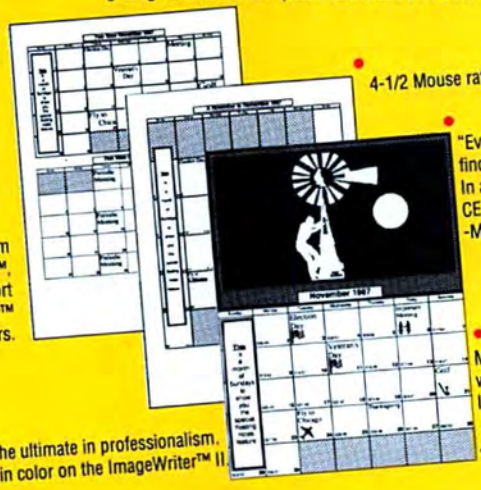
4-1/2 Mouse rating-MacUser, August 1987

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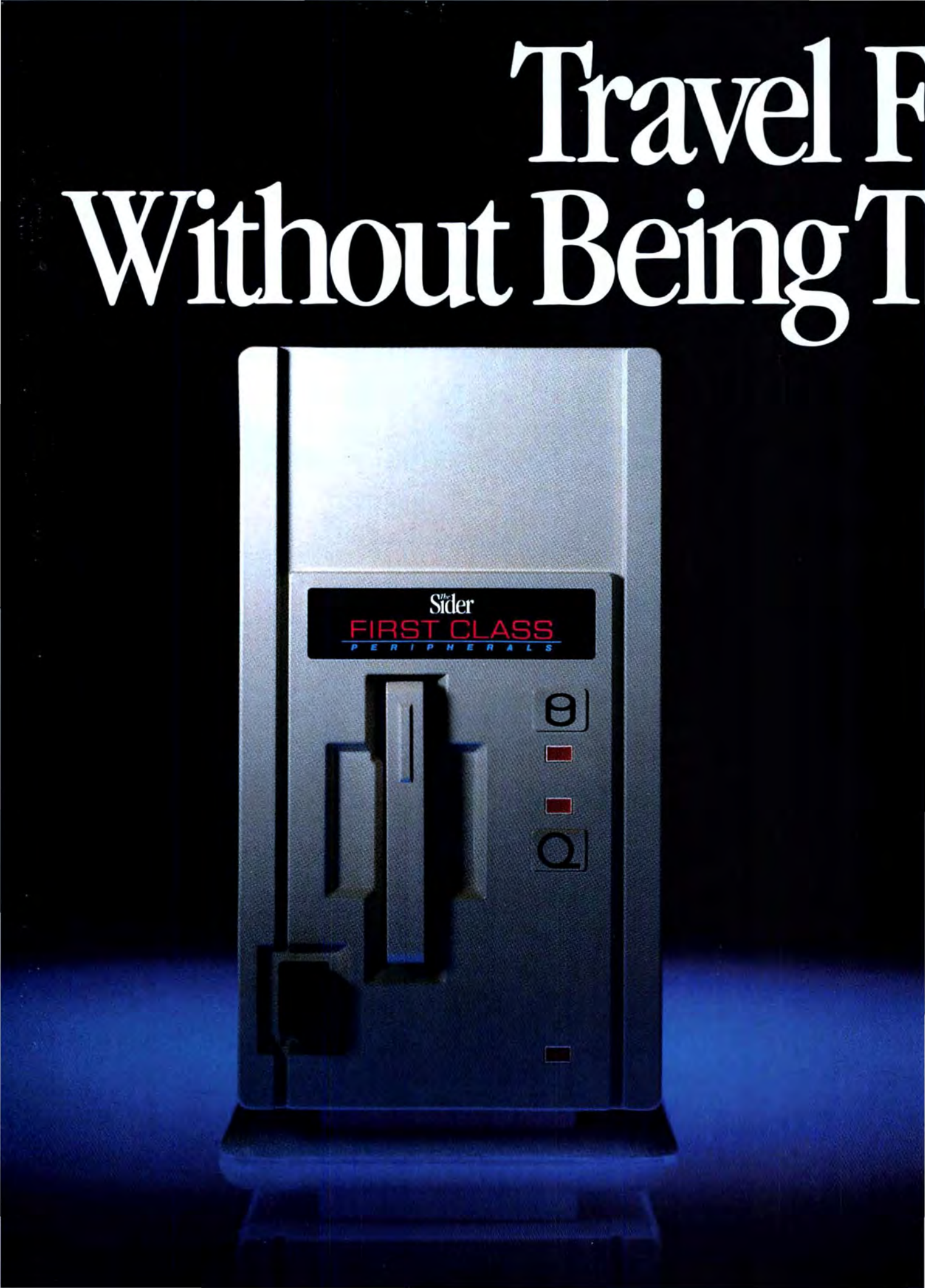
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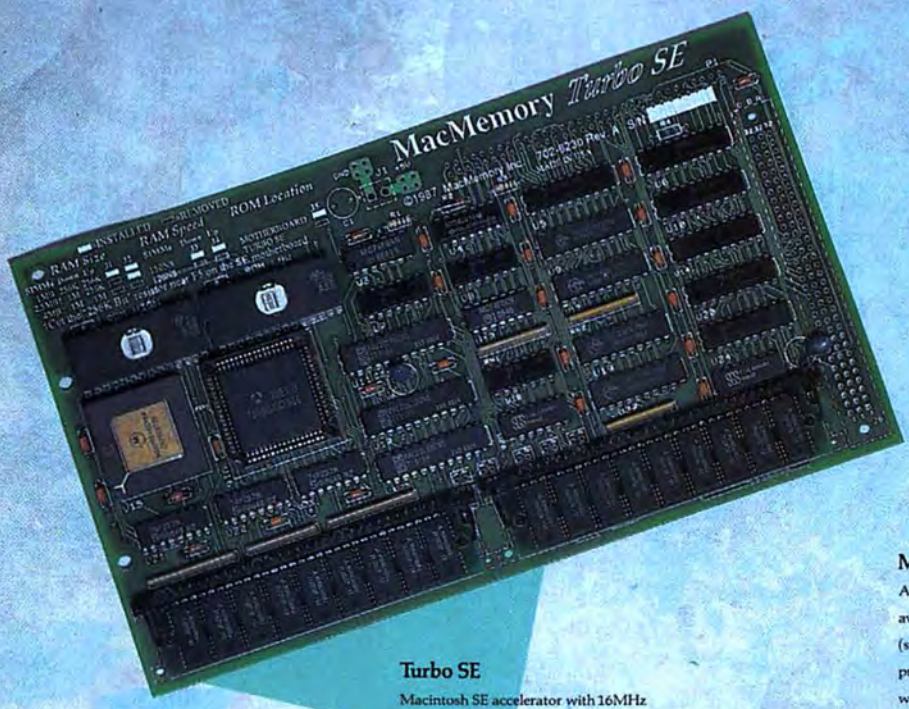
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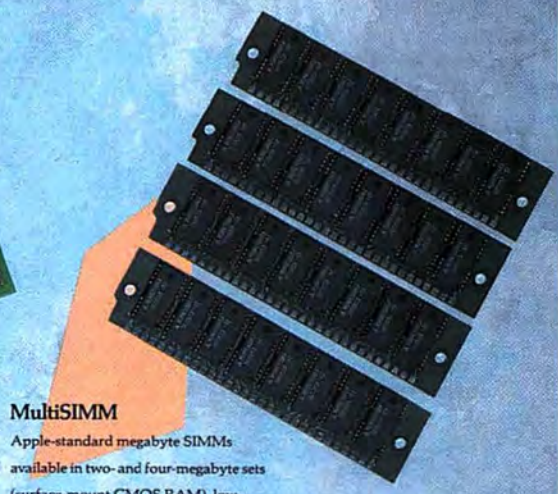
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by Robert R. Wiggins

The Business of Business is Business

I read an interesting article recently in one of the two thousand and one computer and/or business-related publications I read. In this article, managers in some major corporations were quoted as saying that they were halting installation of personal computers and reevaluating their use. Why? Because instead of the anticipated productivity gains they had been led to believe the machines would provide, they were actually experiencing productivity *losses*.

Now how on earth could this happen? I think every one of us can recall spending a few extra minutes tidying up the desktop. Or diddling around with *ResEdit*. Or customizing our *System* files with *Font/DA Mover*. Or playing a quick hand of *Klondike* or *Canfield* (two wonderful solitaire games). But that couldn't offset the productivity gained by having a Mac. Or could it?

It's easier to see happening than most people would care to admit. It's not a problem at first, as the first machines brought in go to the early adopters, who *want* computers and quickly pick up what they need to know, and are off to the races. Instant productivity.

The next wave of machines goes to the less pioneering, but still to people who want the thing on their desk. They're not quite as quick and adept, but they learn what they need to and join the rising productivity curve.

It's about the time the third wave comes in that the problems start. This time the machines are landing on the desks of people who just aren't that comfortable with them, but are being cajoled into using them by managers eager for more productivity increases. These people don't pick things up as fast, and have trouble learning how things work. Who do they turn to? The early adopters, who by now are experts at the new machines. In fact, the early adopters are getting a little jaded, and spend more and more time being "computer experts" instead of doing their real jobs. So the third wave starts pulling down the productivity curve. And these people drag the early adopters with them, who go willingly.

The result is a net productivity gain for the second wave, who use the machines as tools, and an actual productivity decline for the early adopters, who become computer gurus, and a decline for the third wave, who didn't want the machines in the first place.

Why does this happen? All too often it is due to managers becoming overly enamored of technology. "This is the Information Age," they think, "and if we don't get on the bandwagon our company will go down the tubes." So in their race to become technologically literate, these managers toss aside everything they know about business. Technology becomes a goal in and of itself. They rush towards the leading edge of technology without regard to the real goal of the business: profit.

In the race to become technologically literate, technology becomes a goal in and of itself.

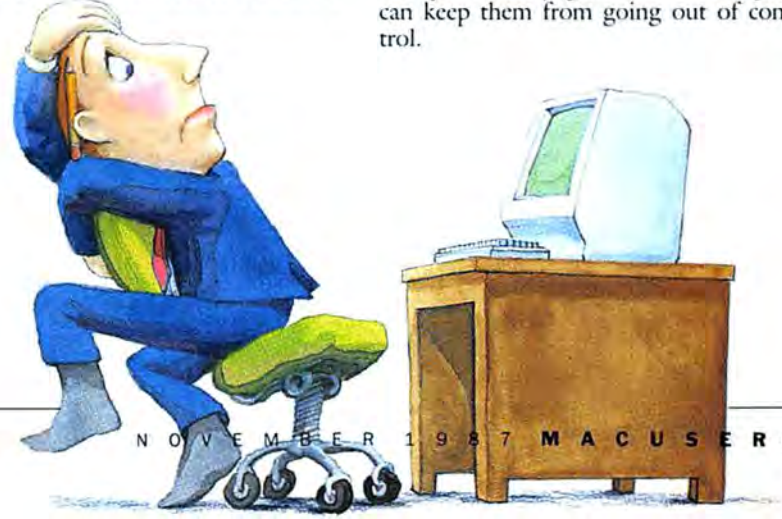
The business of business is business. Each and every company is out there slugging, trying to make a profit. By manufacturing products, by selling products, by offering services, or by any combination of these, companies seek to bring black ink to the bottom line. Even non-profit enterprises have fiscal goals. And the net effect of the computer revolution is not always good for the bottom line. The business of business is not data processing.

Ironically, MIS executives are among the few who understand this, because they went down this path 5 to 10 years ago. Companies were then caught in the mainframe wave, trying to accrue productivity gains through the use of mainframes. They went through much of the same cycle. (For an excellent analysis of this condition, see the seminal work "The Stages of DP Growth" by Nolan, which has been widely published but began life in the Harvard Business Review.) Only in the past decade have MIS groups begun to stem the raging budget tide, and to get their expenses under control and more in line with the productivity advances. But just as they do so, the mini- and microcomputers arrive and make data processing a departmental rather than company-wide budget item, and the cycle begins anew.

And sad to say, if MIS executives had a hard time learning to control themselves when their perspective was the whole company, imagine how long it will take for departmental managers to realize they are hurting the company as a whole when their perspective often covers only their own department.

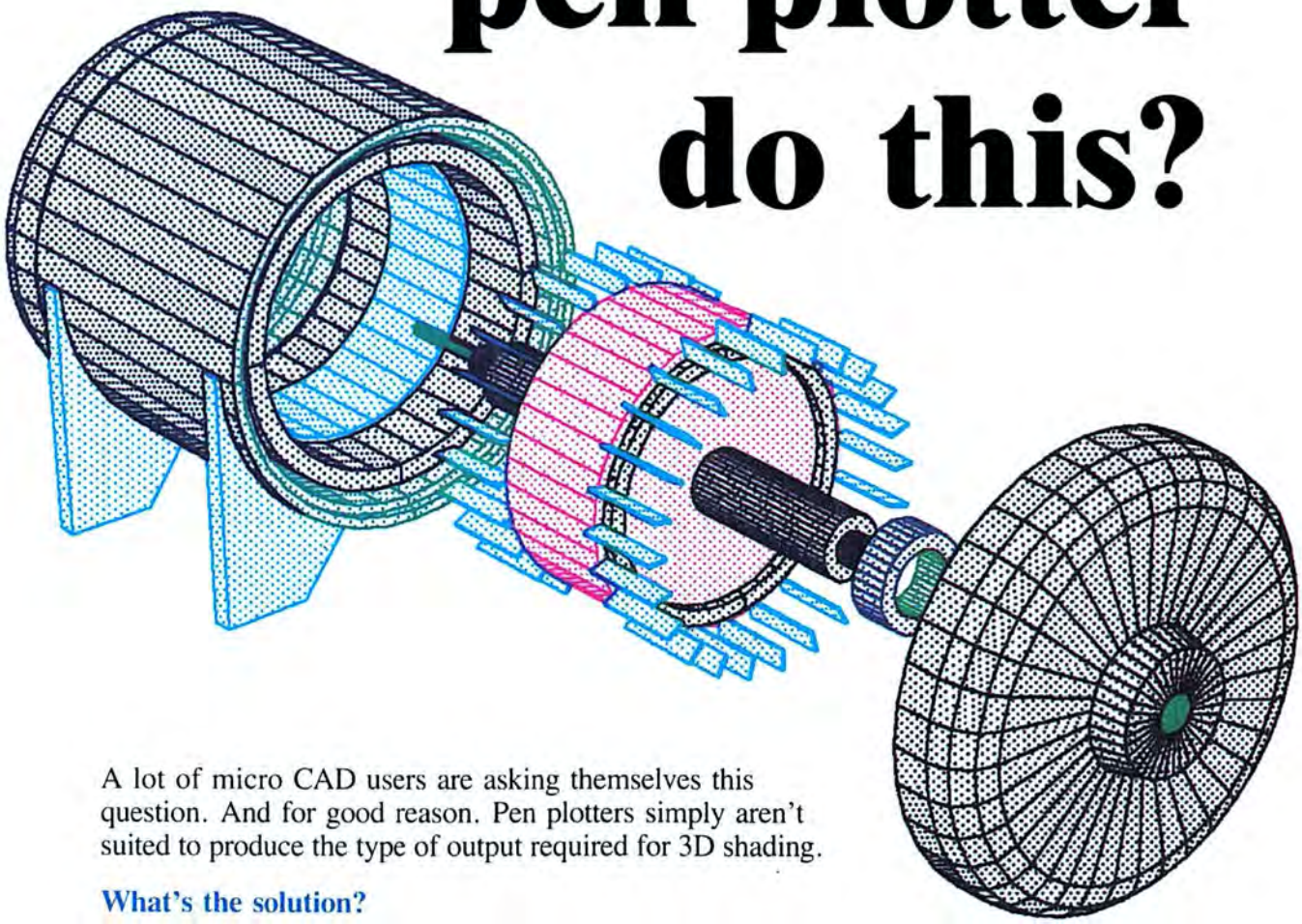
The solution, as with so many things, lies in moderation. First and foremost, managers should always keep the overall goals of the company in mind. At the departmental level, this usually means keeping close tabs on budgets and keeping expenses down. When they can justify computer expenses, they should be very careful what they claim as benefits in terms of increased productivity. If the promised gains fail to materialize, the overall budget goes up and the managers go down in the eyes of their superiors.

Managers need to ride herd on their early adopters. They need to remind these potential computer junkies that the business of business is business, and not hacking. The early adopters could be the source of the department's most spectacular productivity gains if the managers can keep them from going out of control.



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Managers should consider a full-time support position. If they can't justify one in their own department, they should talk to their MIS group and see if MIS can help them out. Or they could try to work a deal with another department for a shared support specialist. Keeping the support calls away from their own people means more time they will have for company business, eliminating the potential double productivity dip.

Managers shouldn't force computers on workers who don't want them, or can't learn them or who won't benefit from them. Sure, electronic mail is a great concept. But people can spend so much time playing with electronic mail that they neglect their jobs. Remember, secretaries are part of the mail system, too. Have them handle electronic mail for workers who don't want or need the instantaneous communication.

Most important, managers should treat computers as they would any other asset. They wouldn't put a postage meter on every desk unless that was the only way to handle the volume. They shouldn't put a computer on every desk unless they know they'll get put to good use. There may, and there probably will, come a day when computers are as simple to use, as necessary and as inexpensive as the telephone. The Macintosh has brought that day several steps closer. And when that day comes, there should be a computer on every desk. But while they still require training (even as little training as a Macintosh requires), while there is any doubt as to their necessity and while they cost thousands of dollars, computer purchases should be carefully considered.

The business of business is business. Don't forget it.

PINSTRIPE PICKS

Looking for productivity in all the wrong places? Here are some products worth looking into if you use your Macintosh for business:

Adobe Illustrator: get high-quality art from the LaserWriter. Steep learning curve, but the results can be worth it.

MORE: from Symantec/Living VideoText. An outliner/idea processor that many find indispensable.

Excel 1.04: from MicroSoft. Another minor revision of the greatest spreadsheet ever.

PageMaker 2.0: from Aldus. A major revision to a major program. If you do any page layout, this one's worth a long look.



Get Your Mac Back with SuperSpool™!

It's a real crime that when your ImageWriter™ is printing, you can't use your Mac. So work grinds to a halt until you get your Mac back.

Now, SuperSpool comes to the rescue.

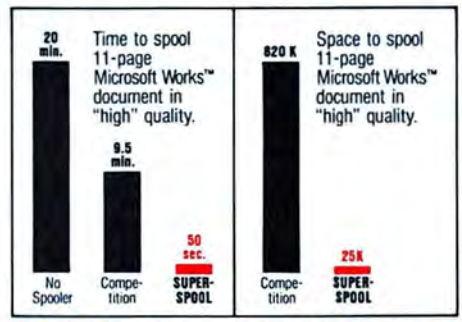
It "captures" (spools) the files to be printed, commands the ImageWriter to print them *in the background* and returns the Mac to you — almost instantly.

With SuperSpool, you can print and work on your Mac *at the same time!*

It is totally transparent; you launch it and forget it.

You can send a continuous stream of documents to be printed and SuperSpool will queue them automatically. You can view all the jobs in the print queue, change their order, delete jobs, pause the printer, and receive extensive on-screen help — without leaving your application program. SuperSpool will even let you switch between applications without disrupting your printing.

SUPERFAST. SuperSpool is, by far, the fastest print spooler available. This chart shows just how much faster you can get your Mac back. The competition takes 6 to 10 times longer. Now you can finish your business plan *while* your spreadsheet is printing. Think of all the time saved!



Lightning fast. *Compared to SuperSpool, the competition takes 6 to 10 times longer to give your Mac back.*

Warning: *Running out of disk space is a real problem with the competition's spool files. Not so with SuperSpool.*

SUPER COMPACT. Other spoolers require the storage capacity of a hard disk. SuperSpool doesn't. It's so efficient, floppy-disk systems can use it.

SUPER FRIENDLY. SuperSpool works with *all* major Macintosh applications (such as Excel and PageMaker).

MONEY BACK GUARANTEE: We're so confident that SuperSpool outperforms every other ImageWriter spooler that if you are not completely satisfied, return it to us within 30 days for a full refund.

If you print to an ImageWriter, you need SuperSpool. At $74.95, it's a small price to pay to get your Mac back.

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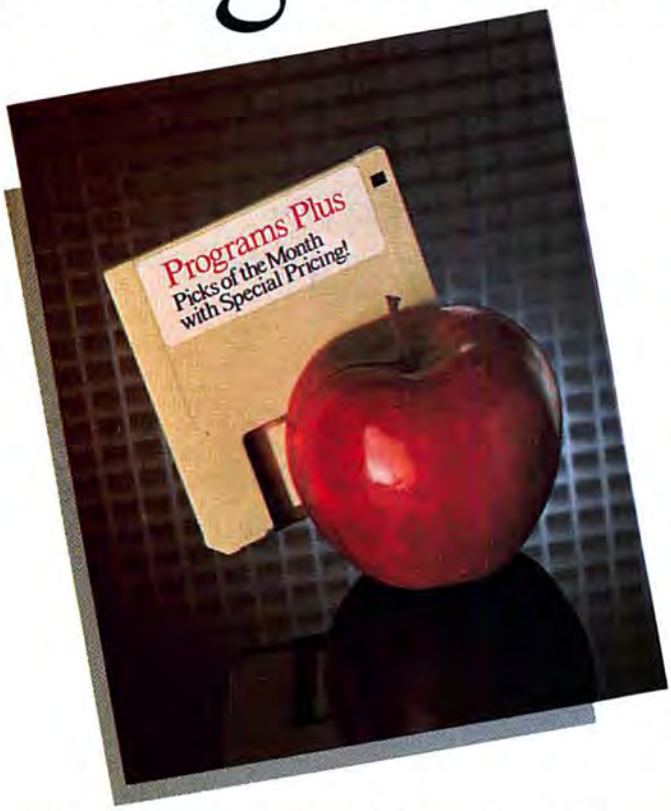


ONLY $74.95!

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Programs & Peripherals

Picks of the Month



Canvas by Deneba Software



Canvas is an new graphics program that will revolutionize the way you draw. You can seamlessly integrate MacDraw objects, high resolution 300 to 2400 dpi images, PostScript and MacPaint graphics in a single document. *Canvas* supports all the capabilities of MacDraw and MacPaint, views your drawing from 3.125% to 3200% and has "WYSIWYG" text editing with powerful commands for special effects.

Canvas **125.**

MacKids Educational Programs by Nordic Software



MacKids is a complete series of twelve quality educational software products for the Mac, specifically designed to teach and entertain kids. Whether your children are preschoolers or young adults, there's a *MacKids* package that will give them the learning edge.

Preschool Disk 1 (3-7), Preschool Disk 2 (3-7), CoinWorks (4-12), ClockWorks (4-10), Early Elementary 1 (Ages 6-9), Lemonade Stand (6-16), FlashWorks (6-adult), Naval Battle (6-adult), Word Search (6-adult), Alphabetizer (7-adult), EarthWorks (10-adult), or Bodyworks (10-adult).

Each Program **29.**

ProModems by Prometheus Products, Inc.



ProModem 1200 and 2400 Baud Standalone Modems are exceptional products that do more and cost less. Standard features include: Hayes command compatibility, real clock/calendar, adaptive dialing, auto redial on busy, two phone jacks for easy switching between voice and data, auto answer/auto dial, and speaker with volume control. And, the *ProModem* is expandable! It can accept an optional Alphanumeric Display and a Communications Buffer that can automate routine modem tasks making it our choice for the *"best buy"* in modems!

ProModem 1200 **229.**
ProModem 2400 **299.**
Mac Pack (ProCom-M software and cable) **49.**

Desk Accessory Programs

Affinity Microsystems		**Greene, Inc.** QuickDex	
Tempo	55.	*(Computerized Address Book)*	25.
Batteries Included		**Imagine Software**	
Battery Pak *(9 Desk Accessories)*	32.	Smart Alarms & Appointment Diary	38.
Borland		Multi-User Appointment Diary	
SideKick V2.0	59.	with Smart Alarms	99.
Cortland		**Solutions, International** SmartScrap	
Top Desk *(7 New Desk Accessories)*	34.	& The Clipper *(New Scrapbook DA)*	41.

Utility Software

ALSoft Disk Express	27.	Icon-It!	
Berkeley System Design		*(Assign Icons to Menu Items)*	39.
Stepping Out *(Macintosh*		**Personal Computer Peripherals Corp.**	
Screen Extender)	59.	HFS Backup V2.0	32.
Central Point Software		**Softstyle** Printworks	49.
Copy II Mac *(Includes MacTools)*	20.	Laserstart Plus	89.
Centram Systems West, Inc.		**SuperMac Software** SuperSpool	
Tops For The Macintosh	125.	*(ImageWriter Print Spooler Utility)*	39.
Fifth Generation Systems		Diskfit *(Backup & Restore Utility)*	49.
FastBack For The Macintosh	61.	SuperLaserSpool	99.
Ideaform Mac Labeler *(Version 2.2)*	29.	Multi-User SuperLaserSpool	259.
DiskQuick *(Disk Librarian)*	29.	Sentinel	49.
Infosphere		**THINK Technologies** HFS Navigator	39.
MacServe *(Network Software)*	165.	LaserSpeed *(Single User)*	65.
LaserServe *(LaserWriter Print Spooler)*	65.	**Williams & Macias** myDiskLabeler	24.
ComServe		myDiskLabeler w/Color	33.
(Modem Sharing Software)	*Special 125.*	myDiskLabeler w/LaserWriter Option	38.
Olduvai Software DA-Switcher		**Working Software, Inc.**	
(Switch Multiple Sets of DA's)	26.	Findswell *(Document Finder)*	37.

Languages

Apple Computer MacPascal	99.	**Microsoft** Microsoft Basic Interpreter 3.0	64.
Borland Turbo Pascal	59.	Microsoft Basic Compiler 1.0	119.
Turbo Pascal Database Toolbox	59.	Microsoft Fortran Compiler 2.2	169.
Turbo Pascal Numerical Methods	59.	**THINK Technologies** Lightspeed C	119.
Turbo Pascal Tutor	49.	Lightspeed Pascal	79.
Consulair		CAPP' for Lightspeed C	54.
Macintosh 68000 Development System	59.	CAPP' for Lightspeed Pascal	36.
Mainstay		**TML Systems** TML Pascal V2.0	68.
V.I.P. *(Visual Interactive Programming)*	85.	**Zedcor, Inc.** ZBasic 4.0	69.

Communications Software

Apple Computer MacTerminal	99.	**Think Technologies, Inc.**	
Compuserve Compuserve Starter Kit	24.	InBox-Starter Kit V2.0	
DataViz MacLink Plus with Cable	149.	*(3 Personal Connections)*	219.
Software Ventures		InBox-Additional	
Microphone 1.1 *(Includes Glue)*	125.	Personal Connections	79.



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Borland
Reflex Plus Call
Chang Laboratories
C.A.T. Contacts•Activities•Time 239.
Forethought FileMaker Plus 159.
Microsoft Microsoft File 1.05 110.
Odesta Double Helix 275.
Multi-User Helix 439.
ProVUE Development
OverVUE 2.1 149.
Software Discoveries
MergeWrite 32.
RecordHolderPlus 45.

Business Software

Apple Computer MacProject 159.
Bravo Technologies MacCalc 85.
Borland Eureka! The Solver 129.
Cricket Software
Cricket Graph 125.
Data Tailor
Trapeze 2.0 *(Spreadsheet/Color Report Generator)* 169.
Deneba Software Comment *(Attach Electronic Notes to Files)* 64.
Forethought PowerPoint 229.
Layered
Notes For Excel, Jazz, PageMaker, Microsoft Works or Word 3.0 *(each)* 42.
Legisoft/Nolo Press
WillWriter V2.0 31.
Lotus Jazz *(Version 1.A)* 179.
Micro Planning Software
Micro Planner Plus 299.
Microsoft
Microsoft Works 1.0 189.
Microsoft Multiplan I.II 110.
Microsoft Chart 1.02 72.
Microsoft Excel 1.04 224.
Micro-Systems Software
Analyze! *(New Spreadsheet)* 99.
Satori Software
Legal Billing 359.
Legal Billing II 519.
Project Billing 429.
Bulk Mailer 3.0 89.
Bulk Mailer Plus 3.0 219.

Word & Outline Processors

Ann Arbor Softworks
FullWrite Professional 169.
Apple Computer MacWrite 99.
Firebird Licensees
Laser Author 105.
Living Videotext More 149.
Microsoft Microsoft Word 3.01 239.
MindWork Software
MindWrite 1.1 179.
OWL International
Guide 79.
Guide Envelope System 99.
Symmetry Acta V1.2 38.
T/Maker Company WriteNow 98.

Spelling & Grammar Checkers

Aegis Development
Doug Clapp's Word Tools 42.
A.L.P. Systems MacProof 3.0 *(Requires MacPlus)* 99.
Batteries Included
Thunder! *(Interactive Spelling Checker)* 32.
Deneba Software
Spelling Coach 3.0 *(Webster's/Medical/Legal/Hyphenation)* 64.
Spelling Coach 3.0 Professional *(Adds Definitions & Thesaurus)* 129.
Coach Merriam Webster's Thesaurus 2.0 39.
Lundeen & Associates
WorksPlus Spell 38.
Microlytics, Inc.
Word Finder *(Synonym Finder)* 39.
Working Software, Inc.
Spellswell Spelling Checker & Proofreader 2.0 44.
Spellswell Medical Dictionary *(35,000 Medical Terms)* 58.
Lookup *(Makes Spelling Suggestions)* 32.

Desktop Publishing

Aldus Corporation PageMaker 399.
Boston Publishing Systems
The MacPublisher III 139.
Letraset Ready, Set, Go! 4.0 289.
Postcraft International, Inc.
Laser FX *(Typographical Special Effects for Desktop Publishing)* *Special* 119.
Quark, Inc.
QuarkXPress 499.
Solutions, International
Glue *(Adds "Print to Disk" Capability)* 41.
Super Glue *(Graphics Integration Package)* 59.
Target Software
Scoop 399.

Accounting Packages

Chang Labs
New Enhanced Version III Modules!
Rags to Riches GL, AR, or AP 125.
Rags to Riches Three Pack-*(GL/AR/AP)* 299.
Inventory Control 243.
Professional Billing 243.
Professional Three Pack-GL/Professional Billing/Payables 349.
Digital, Etc.
Turbo Maccountant V2.0 259.
Migent In House Accountant 99.
Monogram Dollars & Sense 81.
Peachtree
Back To Basics Three Pack *(GL/AR/AP)* 139.
Survivor Software MacMoney *(Financial Planner)* *Special* 41.

Statistics Packages

BrainPower
StatView 512 Plus 179.
Cricket Software Statworks 77.
Systat
Systat 3.1 *(Specify Mac 512K, MacPlus, or Mac II)* *Special* 459.

Graphics Software

Altsys Corp. FONTastic 27.
FONTastic *Plus* 49.
Fontographer 2.2 245.
Ann Arbor Softworks Full Paint 53.
Apple Computer MacPaint 99.
Broderbund Print Shop 39.
Casadyware
Fluent Fonts 2.0 *(Two-Disk Set)* 29.
Fluent Laser Fonts Vol. 1-15 *(ea)* 48.
Deneba Software Canvas 1.0 *(Includes Desk Accessory)* *Special* 125.
Dubl-Click Software
World Class Fonts! Vol. 1 or Vol. 2 28.
World Class Fonts! *(Both Volumes)* 49.
WetPaint Vol. 1 or Vol. 2 28.
WetPaint *(Both Volumes)* 49.
Enzan-Hoshigumi USA
MacCalligraphy 2.0 115.
Japanese Clip Art Scroll 1 *"Heaven"* or Scroll 2 *"Earth"* 59.
Japanese Clip Art "Borders" Scroll 72.
LaserWare, Inc. LaserPaint 319.
LaserWorks 199.
MacroMind VideoWorks II 129.
Miles Computing
Mac The Ripper, Orchestra of Fonts, People-Places-Things, or Taking Care of Business *(each)* 27.
Mindscape ComicWorks 48.
GraphicWorks 1.1 64.
Olduvai Software
Post-ART *(Three Disk Set)* 34.
Silicon Beach Software
SuperPaint 99.
Silicon Press 41.
Solutions International
The Curator *(Catalog Your Art)* 95.
Springboard Certificate Maker 35.
Symmetry PictureBase V1.2 44.
T/Maker
Click Art Letters I, Letters II, Personal Graphics, Publications, Effects, Business Image, Holidays or Christian Images *(each)* 28.
Click Art Laser Fonts: Plymouth, Bombay, or Seville *(each)* 46.

CAD Products

Apple Computer MacDraw 159.
Challenger Software
Mac 3D *(Enhanced Version 2.0)* 119.
Cricket Software
Cricket Draw 175.
Enabling Technologies Easy 3D 69.
Professional 3D 199.
Innovative Data Design
MacDraft *(Updated Version 1.2)* 159.
Silicon Beach Software Super 3D 199.

Educational/Creative Software

Baron's Baron's SAT 35.
Bogas Productions Studio Session 59.
Broderbund Sensei Geometry 64.
Calculus or Physics 64.
Davidson & Associates Speed Reader II 39.
Math Blaster or Word Attack! 28.
Electronic Arts
Deluxe Music Construction Set V2.0 63.
1st Byte/Electronic Arts
Kid Talk, Speller Bee, First Shapes, or Math Talk 31.
Mathtalk Fractions, First Letters & Words, or Smoothtalker 31.
Great Wave Software
KidsTime or TimeMasters 28.
Concertware+ 4.0 45.
Concertware+ MIDI 4.0 95.
Hayden MusicWorks 29.
Score Improvement System for the SAT 59.
Micro: Maps
MacAtlas Paint Version *(MacPaint Format)* 32.
MacAtlas Professional *(PICT/MacDraw Version)* 129.
Mindscape Perfect Score SAT w/The Perfect College 46.
Nordic Software
MacKids Educational Programs *(each)* *Special* 29.
Passport Designs
Passport MIDI Interface 95.
Master Tracks Pro 259.
Rubicon Publishing
Dinner at Eight-Silver Palate Bundle 52.
Simon & Schuster Typing Tutor IV 38.
Springboard
Early Games for Young Children 28.
Easy as ABC 28.

Game Software

Accolade Hard Ball 24.
Activision Shanghai or Hacker II 24.
Hacker 16.
Portal 32.
Artworx Bridge 5.0 20.
Avalon Hill Mac Pro Football 30.
Broderbund Ancient Art of War 27.
Bullseye Software
Fokker TriPlane Flight Simulator 34.
Ferrari Grand Prix 34.
Electronic Arts Starfleet I 37.
Venture's Business Simulator 49.
ChessMaster 2000 or Patton vs Rommel 30.
Archon, One-On-One, Pinball Construction Set, Seven Cities of Gold, Software Golden Oldies or SkyFox *(each)* 15.
EPYX Winter Games or Sub Battle Simulator 24.
Hayden Software Sargon III 29.
Infinity Software, LTD.
Grand Slam Tennis II 34.
World Cup Soccer 27.
Go 23.
Infocom
Ballyhoo, Beyond Zork, Bureaucracy, Hollywood Hyjinx, Leather Goddesses of Phobos, Moon Mist, Nord & Bert, Plundered Hearts, Stationfall, The Lurking Horror, Trinity, or Zork I *(each)* 25.
Hitchhiker's Guide to The Galaxy 19.
Zork Trilogy 45.
Microsoft
Flight Simulator 1.0 32.
Miles Computing Inc.
The Fool's Errand or Downhill Racer 27.
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MacGolf 2.0 or MacRacquetball 36.
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Psion
Psion Chess *(3D & Multi-Lingual)* 31.
Sierra On-Line
Space Quest 32.
King's Quest I, II, or III *(each)* 32.
Silicon Beach Software
Apache Strike or Beyond Dark Castle 32.
Enchanted Scepters 21.
Dark Castle 28.
World Builder 41.
Simon & Schuster
Star Trek *(The Kobayashi Adventure)* 24.
Sir-Tech Mac Wizardry 35.
Sphere, Inc.
GATO, Orbiter, or Falcon 26.
XOR Software NFL Challenge 69.

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AST-2000 1399.
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AST-4000 3699.
74 MB External Hard Disk with 60-MB Cartridge-Tape Backup for the Macintosh Plus & SE.
Central Point
Central Point 800K External Drive 185.
Dove Computer Corporation
MacSnap Model 524 or 524E *(512K to 1MB Upgrade)* 139.
MacSnap Model 524S *(512K to 1MB Upgrade w/SCSI Port)* 239.
MacSnap Model 548 or 548E *(512K to 2MB Upgrade)* 369.
MacSnap Model 548S *(512K to 2MB Upgrade w/SCSI Port)* 459.
MacSnap Plus 2 *(MacPlus to 2MB Upgrade)* 249.
MacSnap Toolkit *(Wrench, Case Cracker & Grounding Set)* 14.
Ehman Engineering
Ehman 800K External Disk Drive 189.
First Class Peripherals
Sider C-46 *(40MB Hard Drive with 60MB Tape for MacPlus/SE or Mac II)* 1629.
IOMEGA *Dual Cartridge Drives*
Bernoulli Box *(Dual 10MB w/SCSI)* 1419.
Bernoulli Box *(Dual 20MB w/SCSI)* 1849.
MacMemory, Inc.
Turbo SE *(16Mhz 68000 Accelerator for the Mac SE)* 399.
MaxPlus Mega *(2MB Upgrade with 1MB Chips for MacPlus)* 349.
MaxPlus 2x4 *(2.5MB Upgrade with 1MB Chips for MacPlus or Mac II)* 549.
MaxPlus 2x4S *(2.5MB Upgrade with 1MB Chips for MacPlus, Mac SE or Mac II)* 629.
Mirror Technologies
Magnum 800K External Drive *(Available in Beige or Platinum)* 209.
Network Specialties
Jump! Board 020 779.
Jump! Board 020 with 1MB Ram 929.
Jump! Board 020 with 1MB Ram & 68881 1089.
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Available in Beige or Platinum Color
MacBottom HD-21 *(20+Mb SCSI Hard Disk)* 859.
MacBottom HD-32 *(32Mb SCSI Hard Disk)* 999.
MacBottom HD-45 *(45Mb SCSI Hard Disk)* 1285.
MacBottom 20 *(20+Mb Serial Hard Disk for Mac 512k & MacPlus)* 859.
Rodime Systems
Rodime 20 Plus Hard Disk *(MacPlus SCSI)* 759.

Digitizers

AST TurboScan *(Optically Scans & Digitizes at 300 Dots-Per-Inch)* 1399.
Impulse Impulse *(MacNifty)* Audio Digitizer V2.0 w/SoundCap 149.
Koala Technologies Corp.
MacVision *(Digitizer)* 175.
New Image Technology
Magic Digitizer *(Mac 128/512k or MacPlus Version)* 249.
MacScan *(High Speed Image Scanner at 300 [DPI])* 1399.
Summagraphics
MacTablet 12x12 size 379.
ThunderWare
ThunderScan V4.0 with Power Port *(Mac 512K, 512K Enhanced, MacPlus, and Macintosh SE)* 199.

Accessories

Bech-Tech
Fanny Mac 69.
Cambridge Automation
Numeric Turbo *Special* 99.
Central Products
MacOpener *(All In One Mac Tool)* 16.
Curtis Manufacturing
Diamond-Surge Suppressor-SP-1 29.
Emerald-Surge Suppressor-SP-2 36.
Ruby-Surge Suppressor-SPF-2 55.
Sapphire-Surge Suppressor-SPF-1 47.
Ergotron
MacTilt or MacTilt SE *(Platinum Color)* 74.
Mouse Cleaner 360° 15.
I/O Design
Mac Luggage Available in Navy or Platinum Gray
Macinware Plus Carrying Case 69.
Macinware SE Carrying Case 79.
Imageware II Carrying Case 49.
Kalmar Designs
Teakwood Roll-Top Disk Cases:
Micro Cabinet *(holds 45 disks)* 14.
Double Micro Cabinet *(holds 60 disks)* 21.
Triple Micro Cabinet *(holds 135 disks)* 29.
Kensington
External Disk Drive Cover 8.
Mouse Pocket 8.
Mouseway *(Mousepad)* 8.
ImageWriter or ImageWriter II Cover 9.
Macintosh (Plus) Dust Cover 9.
Mouse Cleaning Kit w/Pocket 17.
Disk Drive Cleaning Kit 20.
Tilt/Swivel 22.
Universal Copy Stand 24.
Polarizing Filter 34.
Printer Muffler 80 39.
Printer Muffler 132 52.
Control Center 64.
System Saver Mac *(Beige or Platinum)* 64.
A/B Box *(MacPlus Only)* 64.
Turbo Mouse 85.
Moustrak
MousePad 7"x9" Size 8.
MousePad 9"x11" Size 9.
Nuvotech
EasyNet *(Specify Din 8 or DB-9)* 29.
Nutmeg 15" Monitor *(Displays One Full Page)* 1399.
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ImageWriter II-Four Color Ribbon 12.
SoftStyle
MacEnhancer 175.
The Madison Line
Professional Series Carry Cases In Black Ballistic Nylon
Mac(Plus) Carry Case 79.
ImageWriter I (II) Carry Case 75.

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by Neil L. Shapiro

Money Matters

Being associated with a major magazine has its definite perks (short for "perquisites" meaning "something additional to pay resulting from employment"). The perk I enjoy the most is access to a whole world of software. Just about every software program you can think of comes into the offices. I and other staff members get to familiarize ourselves with everything happening on the Mac. So, when it comes time for me to put my own money down for a program, I have a real good idea of what to buy.

In fact, one of the goals of this magazine, of any computer magazine, is to share this knowledge as widely and as objectively as possible. When it comes time for you to part with your own funds, you'll have some factual basis on which to decide.

THE COST OF MAC'ING

The other day I sat down with some mail-order ads and some price lists from local computer stores. I tried to place myself in the position of an everyday Macintosh owner setting up a modest- to good-sized business. One thing soon became obvious to me, the cost of software would not be trivial. In fact, it could easily far outstrip the cost of the computer itself.

And, while *MacUser* and other publications can and do go a long way toward explaining the differences in software, they simply can't substitute for a few weeks worth of hands-on experience using the software in your own business. So while I could skim down the list and know I would need such-and-such, many people would probably make at least a couple mistakes and wind up buying two to three different products in one or more categories before being absolutely satisfied. This would raise the bottom line software-startup costs even higher.

And, while the mail-order lists certainly were more tempting than the in-store retail pricing lists, it was obvious where the support would be better. If a good, local dealer could be found, support there for such things as complex data bases could far outweigh the difference in mail versus in-person costs. Raise the bottom line again.

Then I noticed one other thing. It seemed from the price lists that software for the Macintosh comes in two flavors: expensive and cheap. There are a lot of Ferarris and Hyundais; there are few Buicks.

DOLLARS FOR YOUR THOUGHTS

My first reaction was to feel that perhaps software for the Macintosh is over-priced. My first thought was that many complex programs could be offered in two versions. There would be a full-featured and full-priced version and a cheaper version with fewer features. You could buy the Buick and trade up to the Ferarri later.



But I realized, after talking to various developers, that this idea was too simplistic to be generally adopted. As one developer put it, how would you know what features to cut from the cheaper version? If the programmers choose wrong, the impact of such weakening could reflect poorly (and unfairly) on the more powerful product. Programming is always a crap shoot. You guess what people want and program it in. If you've been lucky enough to make your point, how fast do you want to pick up the dice again?

Then there's the issue of the research time, the labor that goes into building a Ferarri-level product. A man may have literally invested his life—money and time—in developing a product that he hopes will allow him and his people to base their future lives around. So if the return on such investment is not there, what was the point to begin with?

One bright glimmer in all of this is that more and more companies are developing demoware. The typical demoware product shows almost all of a program's capabilities and lets the user actually work with and understand the program. Obviously, the demo version will have important features disabled. Often this means a very small limit to the number of records, no printout and so on.

As more and more demoware becomes available it's getting a little easier for the businessman to at least eliminate the mistakes from the bottom line start-up costs. Demoware has already saved thousands of dollars from being misspent.

Still, from the viewpoint of the new user, that bottom line software cost can still seem to be a very large hurdle.

A GROWTH MARKETPLACE

In the midst of this thinking, there arrived on my desk the latest issue of "Outside Apple," which is the newsletter Apple sends to developers. In an article that gave a lot of excellent advice to developers who are writing and marketing business software there was one line that read: "Don't be afraid to price your software at what it's worth. (It doesn't have to be low-priced because it's for the Macintosh.)"

OK. But I think that statement implies a misleading corollary that if software is for the Macintosh it *should* be expensive. I don't want to get into the situation the IBM PC is in now where if you want one program to sneeze it will cost $600 and if you want another program to say *gesundheit* that will be $895.

I think the above statement would have been absolutely perfect without the parenthetical clause. To wit: "Don't be afraid to price your software at what it's worth."

I think that there are a number of programs existing now whose sales would more than double if their prices were cut by 30 percent. And I think there are programs coming out that are priced at a level where they will not make nearly as much money as they should—even though they will be successful—because they won't reach as broad an audience as they should.

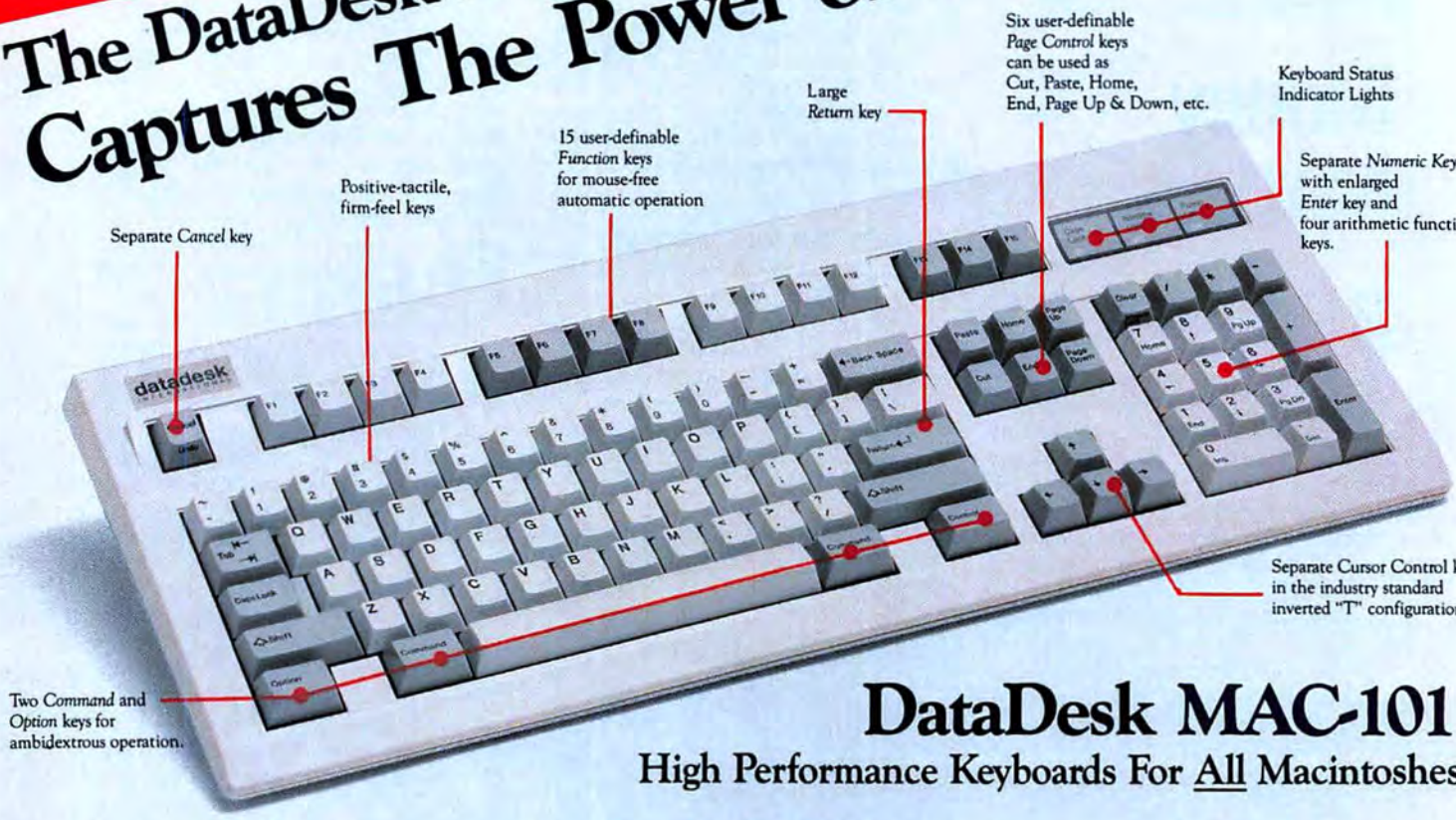
My impression of the Macintosh marketplace is that it is a growth marketplace that is adding more and more people every day. And fewer and fewer of those people are accustomed to paying high prices for software.

Well, it's easy for me to say that developers should think about pricing

KAREN STOLPER

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by Michael D. Wesley

Pied MacPiper

The Macintosh is a great business machine. Most of us already know this; in fact we've known this for some time. If by some chance the existence of superb business oriented software, or the heavy focus of *MacUser* on business based applications hasn't convinced you of this, spend 15 minutes in a locked room with Robert Wiggins, our Contributing Business Editor, and you'll get the message. Trust me.

To make sure that everyone *knows* the Macintosh is a business machine, Apple's marketing pundits have made the distinction between the Apple II line and the Mac line greater than ever. Apple II is the home and education machine. Full stop. Don't even attempt to use an Apple II in business or Apple's equivalent of the thought police will send 100,000 volts through your machine electronically. If you want to develop business applications for the Apple II family of computers, they won't stop you. But they won't help you much, either.

Macintosh is the business machine. Period, end of sentence, this is not a negotiable point. Sharon Aker, in a recent *MacUser* article on kid-directed software, wondered why there is such a dearth of good kids' stuff on the Mac. There are several reasons, but a significant one is that Apple will not go out of their way to support developers who want to develop software for kids on the Mac. They won't stop you. But the attitude is "If you do it, you're on your own." No co-marketing, little or no evangelist support, and so on.

I have already conceded that Macintosh is a great business machine. I use it for business, my friends and colleagues use it for business, all God's children use it for business.

But Apple, I have news for you. Macintosh is a *great* kids' computer. It is, in my not-so-humble opinion, a *much better* kids' machine than *any* Apple II model. Macintosh is, I believe, the ultimate learning tool for kids, with the *potential* to have a dramatic impact on the way kids learn and the way schools teach. But it probably won't, except in small isolated instances. Very largely because of Apple.

SUFFER THE CHILDREN . . .

The fact is, that whether Apple likes it or not, a surprising number of Macintoshes are used in homes. Many of these homes have children. Many of these homes have kids who *use* the Macintosh that hangs out there. Many of these children's parents have bought a *second* Macintosh so the adults can have one to use themselves.

Kids *like* the Macintosh. They take to the little machine quickly and eagerly. Even kids with computer experience are impressed with the capabilities of the Mac. (At least they give the impression of being impressed. Maybe I'm just being fooled by all the times I hear "Oh, wow, that's neat!" and "That's really cool.") Kids are able to recognize right away what many business people took a long time to understand: the Mac empowers you almost instantly to do things you want and need to do.

FROM AN ALMOST INNOCENT BYSTANDER

How can you say that the Mac is a better educational machine than the Apple II family? You admitted above that there is almost no good software for kids on the Mac, and software is what computers are all about. There are thousands of programs for the Apple II models. And you can't say "It's because of the interface" anymore, because the IIGS uses the mouse and QuickDraw and has paint programs and *they work in color!* And sound! Just think of the sound in the IIGS! Come on, Wesley, what gives?

THE OBLIGATORY RESPONSE

(Actually, I can get away with making broad, sweeping statements in a column and not bothering to support them with facts. People will agree with me or they won't, essentially the same thing that happens when I *do* support broad sweeping statements with facts.

The Mac is better because:

1. Speed. The Mac is a lot faster running "the interface" than an Apple IIGS. You don't think speed is important for kids? I have a few questions for you. How bored do *you* get watching the watch cursor as you wait for things to happen? Have you ever watched a kid watch the watch? Do you honestly think a 10-year old has 4 to 10 times more patience than the average computer using adult?

2. Personality. The Mac has a unique and very friendly personality. Let me repeat the word unique. The personality is partly a function of the interface, but the IIGS doesn't have the same personality. Macs are nice, friendly, easy to use *and easy to deal with*. They are non-threatening, safe, comfortable. Why do grown adults fall in love with this little machine?

3. Resolution. The resolution on the IIGS is not as good as a Mac's. Resolution is important when the interface is object-oriented. Kids in particular need a clear, sharp image on screen in order to have a solid sense of what they're doing.

4. Forget color. Color is not important. (I have a short anecdote to support this point. Jeremy is 10 ½, a gifted kid in a class I teach called Desktop Publishing for Kids. Jeremy's introduction to the Mac came through *MacPaint*. As he was playing with the various tools, Jeremy discovered the paint can for fills. He selected the 50 percent gray pattern and said "I'm going to paint the screen blue" and proceeded to fill the screen with 50 percent gray. He then used the eraser to paint cloud shapes "on the blue sky." Jeremy spent about 15 minutes on this work, and consistently called his background fill "blue." In that drawing, 50 percent gray meant blue. Jeremy didn't require a color screen to remember it.)

5. Software. Yes, there is no really good software *specifically* for kids, especially certain ages of kids, on the Mac. There are a number of programs that have some good points, but overall there is nothing outstanding. However, kids can write and draw on the Mac, and do things easier on the Mac than they can by hand or on other computers. Even without great kids' software, the Mac is a great kids' computer.

I'm unfortunately running out of room and I haven't touched on several important issues, which is great. It leaves you hanging until the next issue (always a good thing for a periodical publication). Still to come: how Macintosh can change the world, according to me and some other interesting people.



TONY LIMUACO



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by Doug Clapp

It's a HyperKick!

I have the sneaking suspicion that this *MacUser* is gloriously HyperCardian. But I'll grant that Bill Atkinson has almost as much genius as Apple has marketing muscle. Not that Atkinson's idea is new. It's a Xerox idea. And it's the idea behind *Zoomracks* — a data base-like product for other computers. And there's *Guide*. And, of course, there's the anonymous soul who, about 1574, said "Why don't we take scissors and make little cards and call 'em 'index cards'!"

None of which matters. Ideas are easy. Execution is what's tough.

Speaking of executions, here's a HyperTopic that hasn't been beaten to death yet (but will be in the next few paragraphs).

Do you realize how many products and companies are going to be stomped by *HyperCard?* Really stomped! Kicked in the head. Booted in the belly. Knifed in the groin. And those are mild approximations if you're one of the small (or large) companies on the receiving end of Apple's latest Developer Surprise. (Sayeth Apple: We love you, we love you, we love you! Have some Developer Relations. Try our friendly MacTech support. Read our latest Tech Notes. Attend our programmer schools. And don't worry folks, we're starting Claris, so there'll be none of that nasty conflict-of-interest stuff. Oh, and by the way: StompStompStompStomp.)

Let's face it: any software developer who forgot that Apple's sole mission, their only goal, is selling "boxes," is a fool.

The blows from this one, though, carry. Let's ponder the victims.

First, of course, is *Guide*. Imagine Alan Boyd leaving a secure job at Microsoft to develop and market *Guide*—a good product; innovative, well-documented, well-supported, priced right.

Just when things are going well, when Alan Boyd's company is tooling down the road of well-deserved rewards, along comes this semi emblazoned with "The Power to be Your"—and Splat.

Alan has *Guide* for MS-DOS, though. If it was innovative on Macintosh, it'll probably be the second coming on DOS machines. *Guide* will do okay.

It gets more interesting when you get past *Guide*. Here's what I think: Microsoft can kiss *MS-BASIC* good-bye. BASIC is a "recreational programming language." From now on, recreational programmers will recreate with *HyperTalk*.

Borland can forget *Macintosh Turbo Pascal*. Real programmers don't use *Turbo*. Real programmers use *MPW* or one of the fine *LightSpeed* compilers from Think Technologies. So *Turbo*'s gone.

And, unfortunately, *V.I.P.* is also dead at the starting gate. Why use *V.I.P.* when there's *HyperTalk?* No reason. A great idea, but see ya around. Recreational programming products for the Macintosh are now dead.

So are many paint programs. *FullPaint* will be hit hard. *SuperPaint* less so, but I bet Silicon Beach is less than thrilled with *HyperCard*. Why buy a paint program when *HyperCard* is free or $50? Oh—I almost forgot—*Silicon Press* will also get a casual, but maybe fatal, HyperKick in the head.

What else? Data bases. Low-end data bases are dead meat. *Microsoft File, FileMaker Plus, RecordHolder Plus, OverVUE*. All will suffer mightily. Some will expire. Pity prevents me from even mentioning...well, just this mention: *Filevision*.

Low-end data bases are radioactive. They won't die immediately, but corporate cancer will set in just about when the business plan said "break even."

What's left, what's left? Communications! Why use *MicroPhone* when you can use *HyperCard?*

Accounting is one category that's almost off the ground. Just now we're seeing good accounting packages. But HyperScythe will slice away all but the highest end accounting packages.

Think we're running out of categories? Ha! What about courseware? Courseware products are doomed. Schools don't have money. *HyperCard*, essentially, is free. This one truly is a shame, because *HyperCard*, truly, doesn't have what true courseware software should have. But it's a fact: courseware products are doomed. A related software field, Education, will also be pummeled. Typing programs may escape, just.

About now, you're probably thinking: who will survive? I bet magazine advertising reps, and dealers and distributors are wondering the same thing.

But some categories remain: word processing, desktop publishing, high-end data bases, entertainment, utilities, spreadsheets. Not enough to fill up a MacConnection ad, but a few.

And you know what? I think it's great. I don't mind a bit. In this market, more than anywhere, the price of failure to innovate is death. Microsoft leaves *File* and *MS-BASIC* to twist in the wind (for years!) and along comes *HyperCard* to cut the cord.

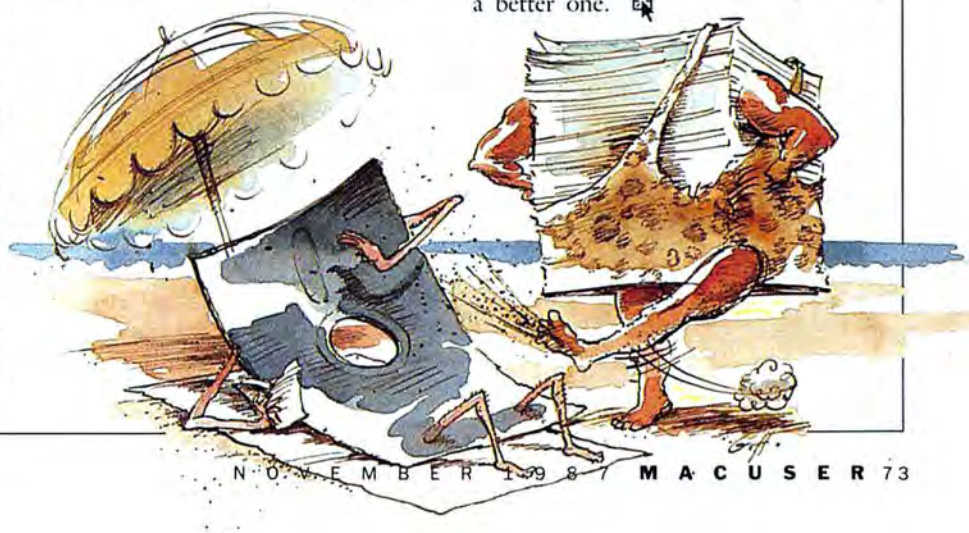
Had Microsoft given its products their due, they themselves might now be innovative, not moldy. (And there's a lesson here for *Excel*, too, if anyone in Redmond is listening.)

And Borland gives us a ho-hum *Turbo*. And *FullPaint* — which should be 4.0 by now—is adrift while the Ann Arbor boys chase big money in word processing.

Who wins? Writers win. This time next year, you'll have lots of *HyperCard* books. Danny Goodman will own a small South American country.

You know, once upon a time, Steve Jobs hoped all Macintosh software would be $100 or less. Now that every Tom, Dick and Mary can HyperProgram, it just might happen. A compupopulist dream: the revenge of the masses. Affordable software. Three megabytes for $30.

It's gonna be a wasteland out there, but my eyes are dry. Like you, I'm a user first, and anything else only after that. Is it good? Bring it on! Did your product just get stomped to death? Tough: Make a better one.



GARY HOVLAND

Jasmine introd
With the



The MegaDrive™ with 10MB MegaFloppy™ disks is here.

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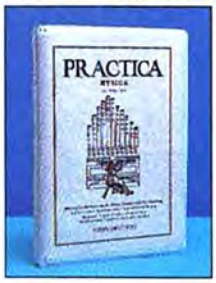
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QUICK CLICKS

Quick Clicks are short reviews of released products, not beta releases, pre-release products or vaporware. If it appears here, it is available commercially. Products reviewed here will often be the subject of a longer review in a future issue.

PRACTICA MUSICA ★★★★



List Price: $129. Published by Periscope Press, PO Box 6926, Santa Barbara, CA 93160. (805) 564-2518. Requires 512K+. Copy protected.

Practica Musica is an interactive program for ear training and learning music theory. It was originally written by a music teacher at the University of California Santa Barbara, as a way to help his students. Although *Practica Musica* will be of greatest benefit to serious music students, it's also a learning game that can be quite fun for anyone who enjoys music and wants to learn the basic concepts of melody and harmony or develop a trained ear.

Practica Musica begins in practice mode, with a 36-key standard organ keyboard across the bottom half of the screen and a small staff above it. Notes are played by placing the arrow cursor on one of the keys and holding the mouse button down. Each time a note is pressed, its value is displayed in the correct position on the staff. The tones are produced through the Macintosh speaker, but come from digitized samples of pipe organ sounds. The quality is excellent.

There are two options for practice: melody and harmony. In melody mode, the graphic keyboard acts just like a real keyboard. A note will play as long as the key is held down. If you press the shift key, the note continues to play while you move the cursor to another key so you can play more than one note at a time. The melody mode is mainly for fun, although it can teach you the relationship between a note on the keyboard and its position on the written staff.

In the harmony mode, *Practica Musica* records each tone played as a whole note and builds chords from the notes that are played. As any recognizable chord is produced, the program identifies it and tells you whether the chord is in a root or inverted position.

The real intention of *Practica Musica*, though, is to act as a learning tool. Thus there are several games designed into it that teach theory for intervals and chords, and ear training for intervals and melodies. The exercises link the physical



keyboard, the written staff and the sound of a note, chord or strain. In this way, students learn how a note in a particular spot on the keyboard sounds and how it is written in music notation. The combination of the three provides a very powerful learning tool.

In the theory section, there are several levels of drills that teach the difference between, for example, a major third and a minor third. The program prompts you to write a particular interval, say a major third descending from E. The staff and keyboard remain blank until you enter a note on the keyboard. Each note you enter is immediately written onto the staff. If you make a mistake, though, you can erase a note simply by replaying it. When you think you have the right answer, click in a button above the keyboard. The program then evaluates what you have played.

Correct answers score one point. You need a score of 16 to proceed to the next highest level. If your answer is incorrect, *Practica Musica* does three things to help you learn from your mistake. First, it tells you the correct name of the interval you entered. Second, it flashes the appropriate keys *and* prints the notation for the correct answer on the staff. Third, it reduces your score by as much as half and makes you climb your way back up again. Your progress is saved from session to session, though, so you don't have to start from scratch every time you try. The theory drills for chords are very similar.

The ear training drills are the most fun, although they can be extremely difficult. In the interval section, *Practica Musica* plays a pair of notes. It gives you two choices for the correct interval, and highlights the keyboard position of the higher note. You have to choose the correct interval and press the correct key for the lower note.

In the melody section, the program plays a short strain from a tune that is sometimes familiar but sometimes quite obscure. Your job is to enter the notes, either from the keyboard or directly on the staff, to reproduce the melody exactly. You can hear the original up to three times without losing points and can play back whatever portion you've entered to compare it with the original. You can also edit notes that are incorrect. Because the goal of the exercise is ear training and not rhythm, the program places the correct values for you. As with the other drills, the program waits to evaluate your work until you tell it you're ready, then it highlights incorrect notes and gives you a score.

The manual for *Practica Musica* is excellent, providing clear directions so you get the most out of the program. These include warnings about using background programs such as *JClock* with *Practica Musica*. Don't. Background programs interfere with the program's

GARY BUSS

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sound driver and cause loud clicks and pops when notes are being played. Even AppleTalk can do this. Half of the manual is devoted to a tutorial on the principles and terminology of music theory, so that you don't have to rely on past training to remember what a major third or an augmented seventh actually is.

Practica Musica comes with a set of Realistic headphones, which offer a dramatic improvement over the Mac's tiny speaker. Unfortunately, with the headphones you can hear some background hiss that is to a large extent unavoidable, although Jeffrey Evans, the author, is working to filter out as much noise as possible.

Practica Musica is a sensational learning program because it's well designed and it's great fun. If you want to improve your ear for music, either for serious study or just to increase your listening skills, get it.—*MDW*

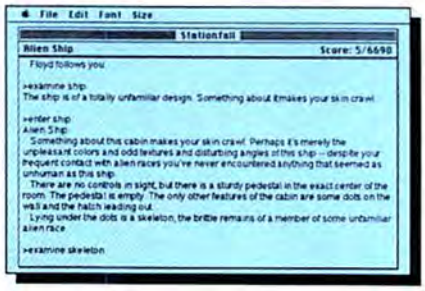
STATIONFALL ★★★★½



List Price: $49.95. Published by Infocom, 125 Cambridge-Park Dr., Cambridge, MA 02140. (617) 492-6000. Copy protected.

I have waited for 3½ years for this game to appear. (And I am not a patient person.) It's the sequel that my robotic buddy, Floyd, promised me at the end of *Planetfall* — in my opinion one of the best text adventures ever. (For those of you who played the original successfully: you still don't need the Helicopter Access Card, but the paddleball shows up.)

You start this one as the same loveable character you've always been, but you seem to have lost the exalted station you won so arduously in *Planetfall*. Still, you're not scrubbing decks anymore; now Ensign Blather takes care of that.



You are now a filler-in-of-forms, trapped in bureaucratic procedure.

Your first task is to get off the S. P. S. *Duffy* and make your way to Space Station *Gamma Delta Gamma* 777-G-59/59, Sector Alpha-MU 79 to pick up 24 pallets of Stellar Patrol Issue Regulation Black Binders Request Form Forms. In triplicate. But first you have to acquire a robot, if only to help you remember what you're looking for.

If you haven't played the original game, here's a handy hint: ignore both the wimpy stenographer-bot and the one with brawn and few brains. Go for Floyd who has neither, but who has always been excellent company, even with his habit of reciting multiple digits of pi when bored. He seems to have developed a smart aleck sense of humor since you last saw him. (Try restarting a game and you'll see what I mean.)

Naturally, getting to the space station is the least of your problems. If you don't agree, try admiring the watch your parents gave you and go from there.

Once you get there, nothing seems to go right. (As Douglas Adams has so ably demonstrated, that's the way with bureaucracies.) Not only can you not find the all-important forms, you can't find anybody to find them for you. In fact, you can't find anybody at all. However, you do run across some ominous objects—such as an abandoned still-hot cup of coffee and an alien space craft.

Unfortunately, Ripley does not appear in this game.

However, a condescending robot named Plato, with an almost inexhaustible stock of platitudes, does. He cozies up to Floyd right away (or vice versa). Keep your eye on him. I can say no more.

I was thankful that *Stationfall* is not another Infocom adventure with Byzantine or non-existent opportunities for mapping (as were *Hitchhiker's Guide* and *Spellbreaker*). On the other hand, it's not exactly straightforward, either. In fact, given the normal shape of space stations, it's circular. A map is provided with the game, but you can't expect them to tell you everything. So keep looking around and don't worry if you seem to be going in circles. (Sorry.) If you've played text adventures before, you know the drill. Look everywhere, pick up anything that isn't nailed down and read anything with print—including alien writing, if you can decipher the code. Avoid grues or find a light. Don't overlook the ostrich. you may have to do something to Floyd much worse than turning him off. Eat regularly and get sufficient rest. (If you need more hints, write to Infocom for the InvisClues booklet. Don't call me!) *Stationfall* is one of those rare sequels that lives up to the original (the only others that come to mind are *Zork* and *Aliens* — the movie). If you like text adventures—and especially if you loved *Planetfall*—this one's for you.—*LK*

FastForms! Construction Kit ★★★★



List Price: $89. Published by New Directions Software, #206, 2915 19th Street N.E., Calgary, Alberta, Canada T2E 7A2. (403) 250-1969. Not copy protected.

FastForms! Construction Kit from New Directions Software is really two programs. The first is a drawing application that creates customized business forms quickly and easily. The second is a desk accessory that swiftly accesses those forms from within other programs. You can fill in and record a form on the spot using either the *FastForms!* application or the DA.

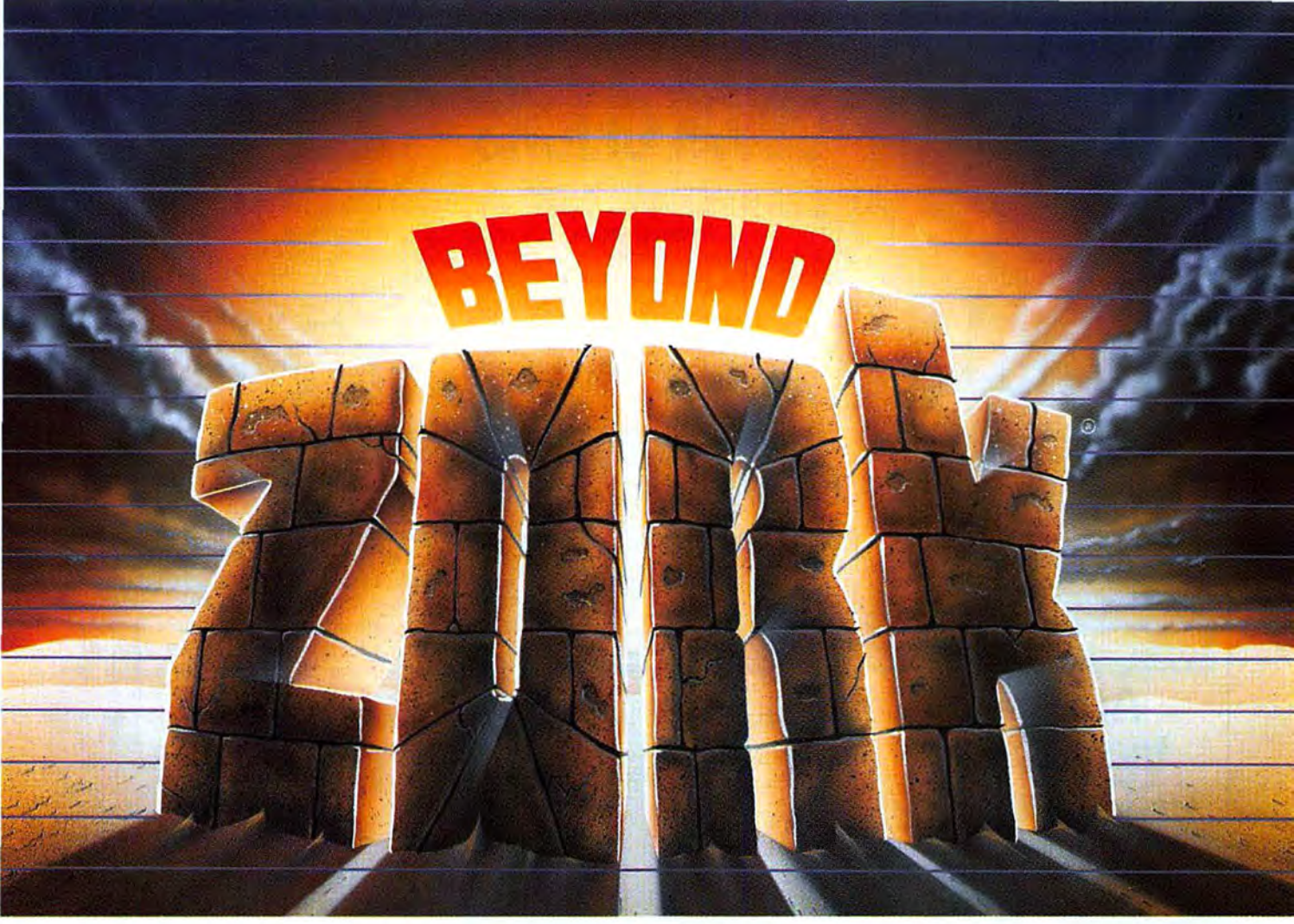
FastForms! files are organized in their own hierarchy, separate from the Mac's HFS. The forms are created in Pages within Folders. A file may encompass many Pages and Folders, which can be nested. Of course, *FastForms!* files may themselves be kept within the directory and subdirectory folders of HFS.

Forms are designed in a drawing environment, similar to *MacDraw*, that produces object graphics. The drawing screen has two layers: visible and invisible. Everything on the visible layer will be printed (producing the entire form) while anything on the invisible layer (useful for screen templates of paper forms you already use) is not. The size of the page may be specified up to 8½ by 14 inches, and rulers and grids in a variety of dimensions are available for precise alignment of graphic and text elements.

Though not as powerful as a full-featured drawing program, *FastForms!* contains a good complement of tools. Lines, boxes, ovals and text may be drawn and manipulated. A variety of Pen and Fill patterns are provided. And a choice of line thicknesses, including true hairlines, is offered.

For good measure, *FastForms!* also

GARY BUSS



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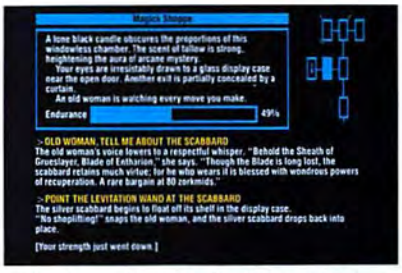
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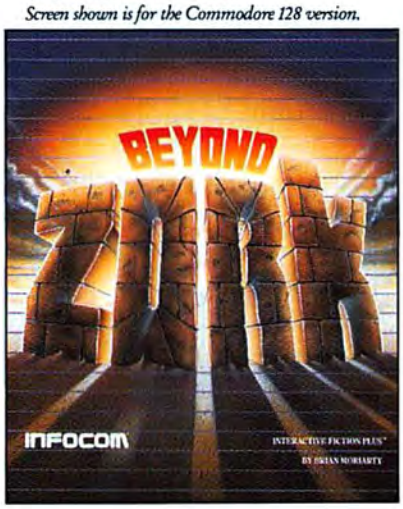
Beyond Zork *is available at your local dealer for the Apple II series, Macintosh, Commodore 128, Amiga, IBM PC and 100% compatibles, and Atari ST. To order direct, call 1-800-262-6868. Coming soon: Apple IIGS.*

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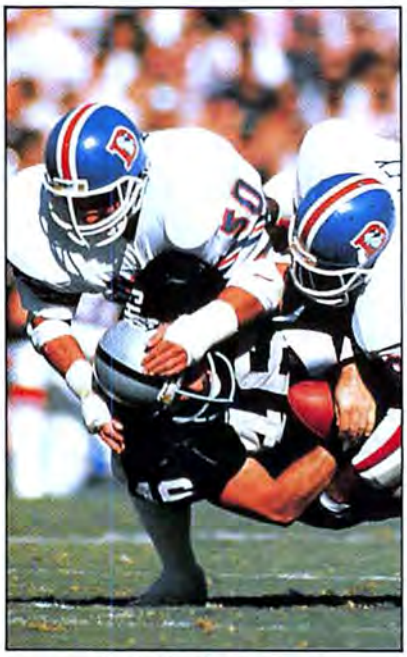


One glance at Beyond Zork *will show you that it's unlike any interactive story you've seen before. On-screen mapping. Window displays. A character that grows in strength and power. You get all the excitement of role-playing games, skillfully blended with the fabulous puzzles and award-winning prose of Infocom's interactive fiction.*

Screen shown is for the Commodore 128 version.



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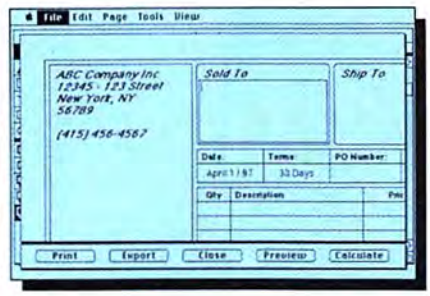
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QUICK CLICKS

throws in a few wrinkles. In addition to the normal working screen, full page, 50% and 75% reductions, and a 200% enlargement view are available, with most tools remaining operational. *FastForms!* even allows you to split the screen (vertically, horizontally or both) if you wish to work on more than one section of the page at a time.





What sets *FastForms!* apart from a simple drawing program, however, is the ability to add data fields to your drawing. These are generated by dragging a Field Object box over the location where you wish to enter data on your form. Text, numeric and calculated fields may be designated and formatted (and formulas entered for calc fields) in a Dialog at the time of creation, or modified later. The calc fields only support simple operations, but then, this isn't a spreadsheet.

Creating forms is easy once you get the hang of it. The program responds crisply and predictably. However, be careful when selecting objects in your drawing. If you inadvertently choose a background object and move the mouse, it will jump to the foreground, obscuring your work. Rearmost objects may be restored to their original location with the SEND TO REAR command. Moving an object back to the middle of the pack, however, requires that you bring the "leapfrogged" objects to the front, ahead of the mismoved element.

When the form is to be printed, *FastForms!* interrupts the process with a data entry screen that allows you to fill in your fields. Using this screen, you may also export data (automatically or by choice) to disk, where it may be transferred to your data base, spreadsheet or accounting system. Once the transaction has been duly recorded, it can be printed. Both the ImageWriter and LaserWriter are fully supported.

The *FastForms!* DA allows you to do the same things from within another application. The DA lets you open *FastForms!* files, enter the necessary data, export the information and then print the form. The DA permits you to travel vertically through Folders to Pages but does not allow you to jump from one file to another. To switch files you must Close and re-start the DA.

The *FastForms!* manual is reasonably comprehensive but readers should have a working knowledge of the Mac. The tutorial introduces most of the features of the program but is a little short on explanation. The Reference section is more complete and easier to follow.

Business forms are the primary focus of this program, although *FastForms!* is suitable for a wide range of other applications as well. N. D. S. suggests letterheads, note pads, calendar/schedulers, mailing lists, newsletters and even check writing as possible uses. A disk filled with useful templates is included in the package. *FastForms!* is flexible, versatile and well worth your attention.—*Carlos Martinez*

FINDSWELL ★★★★★

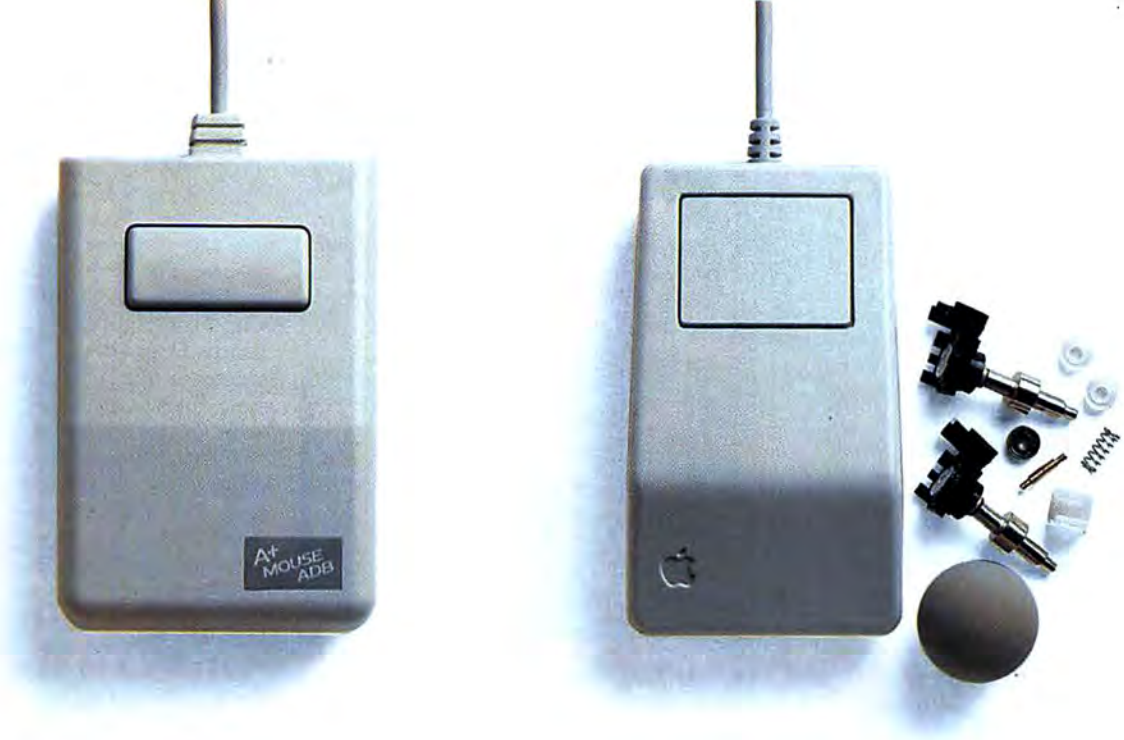


List Price: $49.95. Published by Working Software, Inc., 321 Alvarado, Suite H, Monterey, CA 93940. (408) 375-2828. Requires 512K. Not copy protected.

Despite the claims sometimes made in software advertising, there are very few programs that you can't live without. When you do come across a program that is truly indispensable, it usually isn't a major application, but often a good utility. Good examples would include a reliable hard disk backup program or a desktop utility that enhances the interface in some way. *Findswell* is such a program—a simple utility that saves so much time and energy it may be worth 20 times its price.

Findswell takes about a minute to install. The longest part of the process is restarting your Mac after you drop the *Findswell* application into your System folder. On startup, you'll see the clever

GARY BUSS



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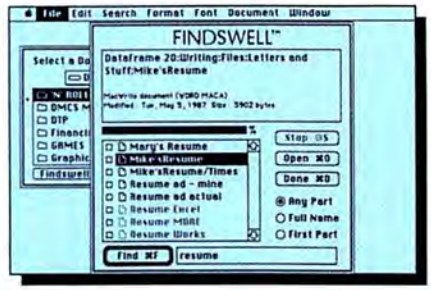
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QUICK CLICKS

Findswell icon (a Mac with funny eyeglasses) in the lower left corner of the screen. What *Findswell* does is so simple and useful that it really is extraordinary.



Here's what it does. HFS is a useful filing system, but if you aren't extremely organized and if you use more than two levels of files, it's easy to misplace documents and applications by burying them in a folder somewhere. Several utilities, available as desk accessories, can locate files, but *Findswell* goes these products one better.

Findswell installs a new button (called, not surprisingly, Findswell) in the Open dialog box of virtually every Macintosh application. The shape and location of the button varies slightly depending on the application, but it's generally found just below the List window. Press the button (or COMMAND-F) and the *Findswell* dialog box overlays the Open dialog. In it is a button called Find, followed by a text entry box. Type all or part of the name of a file or application in the box, then click the button or press COMMAND-F to find files that match your entry. *Findswell* scans your disk, peeking in this folder and that, and locates files that match the search string.

As it encounters a match, *Findswell* displays the name of the matching file in a list box and continues the search. A Find-meter records the program's progress as a percentage of disk area scanned. When it's finished, *Findswell* has a list of files that match. Files that match but which can't be accessed from the current application are listed in gray. Select a file name in the list and *Findswell* tells you the complete pathname for the file's location (for example, DataFrame:Word Processing:Files:Letters:User Group); the application that created the file, when the file was created and its size. That way, if you carelessly have two files with the same name in different locations, you can tell which is which.

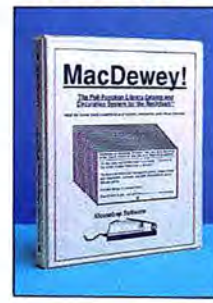
A button marked Open in the *Findswell* dialog box (with the command key shortcut COMMAND-O) opens the selected file. And, as should be the case with any well-behaved Macintosh program, you can also open a file by double-clicking. The Stop button stops a search in progress, if *Findswell* locates the file you want right away, and a button named Done closes *Findswell* without opening a file. A thoughtful touch—for those times that you use *Findswell* just to locate an errant file, not to open it.

Although *Findswell* is useful for messy floppy disks, its greatest value is to the hard disk user whose folders are as deeply nested as a colony of jungle birds.

The *Findswell* manual is only a 6-page foldout, but has everything you need to know with clear, easy-to-follow descriptions and instructions. There is also a *Findswell* Launcher, that launches *Findswell* from the *Finder*.

Findswell is an outstanding product you would do well to find.—*MDW*

MACDEWEY! $$$



List Price: $79.95; search-only disks: $9.95 to registered owners. Mousetrap Software, 336 Coleman Drive, Monroeville, PA 15146. (412) 372-9004. Requires 512K+ and 800K external drive. Version 2.5 reviewed. Not copy protected.

MacDewey! or don't we? Librarians surely won't. But music lovers hoping to get a handle on their audio collections, film buffs whose videotapes are on permanent vertical hold and office administrators with small book collections may find *MacDewey!* a useful addition to their software libraries.

MacDewey! is an easy-to-use data base designed to organize and administer small book collections. With preassigned, fill-in-the-blanks, fixed fields, users create electronic "catalog cards" that become the records from which title, author and subject searches and circulation tasks are performed. Each record displays title, author, borrower, due date, location, a user-defined field and a classification number based on the Dewey Decimal classification system.

Creating a *MacDewey!* catalog record, or "card," requires a modicum of effort. There's a quick initialization and set up process. Here you can define one non-searchable field (for example, acquisition date or price), set up two loan periods (theoretically from 0 to 99 days), and create what the *MacDewey!* producers call a shelf catalog. After this procedure,

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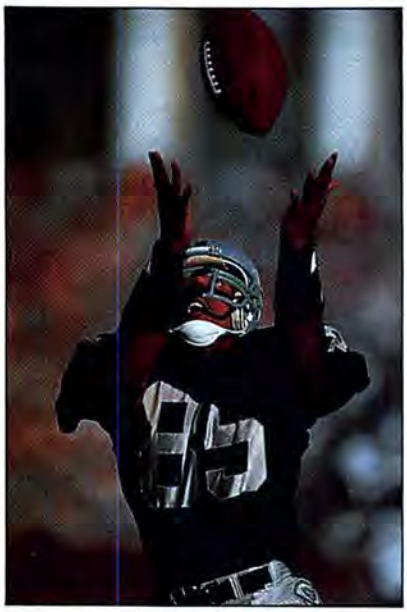
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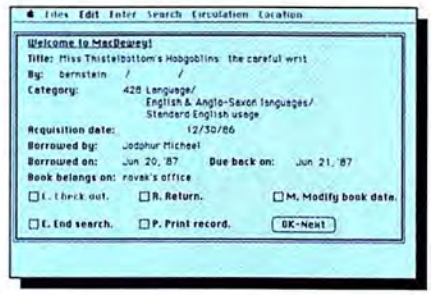
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5421 Opportunity Court
Minnetonka, Minnesota 55343
(612) 938-0005

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QUICK CLICKS

simply select the ENTER BOOKS option and, following the on-screen instructions, enter data in the fields provided. Then presto, you have an on-line catalog. With your books, records and videotapes finally organized, you're now a qualified library automation consultant, right? Not quite, and here's why.

Because of its limited ability to create, and thus retrieve, detailed bibliographic records, the program is unacceptable for any situation where complicated distinctions become necessary. The *MacDewey!* anomaly guaranteeing it exclusion from any working library is the system's acceptance of only a surname in any of the three author fields. What does this mean? Say you have a collection of Karl Barth's theology and John Barth's fiction, the system cannot distinguish the two Barths in an author search. While this will unlikely affect most home libraries, imagine a 2000 record (the maximum number of records per file) catalog filled with Browns, Smiths and Johnsons. Author searching would become tedious.



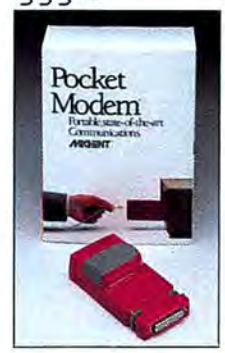
MacDewey!'s implementation of the Dewey Decimal Classification (DDC) is cunning, but it's not a serious library application for two reasons. First, it uses the DDC as a subject classification, which it's not. The DDC was developed to actually bring subjects together on a shelf. The most common subject headings used in the United States are the Library of Congress and Sears subject headings. With the second, its search function simply didn't work consistently. Whether I conducted a truncated or full subject search on subjects I knew were entered in the data base, the program pulled up the wrong titles. I built a second book file, which did work, but there were very few titles in it.

The program documentation could be more explicit. The librarian's set-up documentation never instructs you to drop articles when inputting records, yet the search program tells users to drop articles when searching. The program does not *automatically* overlook articles.

Despite its shortcomings, *MacDewey!* is a clever little data base with some nice features. With a lower price tag and general bug fixes it would be a good home library organizer.—*Karen J. Novak*

MIGENT POCKET MODEM

★★★½



List Price: $259. Migent, Inc., 865 Tahoe Blvd., PO Box 6062, Incline Village, NV 89450-6062. (800) 633-3444.

"Portable, State-of-the-Art Communications." That's what it says on the box in which the Migent Pocket Modem comes packaged. And it's right on all three counts. "Communications" one would assume, given that it's a modem. In this case it is a 300/1200 baud fully Hayes-compatible modem. "Portable"—that's an understatement. The device is about the size of a 3 x 5 card, and not much thicker. One-and-a-quarter inches, to be precise—and most of that is to make room for the battery. "State-of-the-Art"—must be, if they managed to put all that modem in such a tiny space.

On one end of this mighty mite is a familiar DB-25 connector for the RS-232 interface. On the other are two RJ-11 connectors for plugging the modem into your phone; and a connection for attaching to the power adapter, which, like the modem itself, is tiny. And did I say battery? Yes, indeed. The whole thing can be powered for up to 10 hours with a standard 9-volt. The power adapter, phone cable, battery and an RS-232 DB-25 to DIN-8 cable all come packaged with the modem. (Mac 512 owners can get a DB-25 to DB-9 cable instead.)

Also bundled is Borland's *MacTerm* 2.0, a desk accessory for telecommunications. We're not talking *Microphone* here, but *MacTerm* is a fully functional communications program. It allows you to store a list of up to seven phone numbers for automatic dialing (but not autologon—there's no scripting capability), can send and receive files as text or in MacBinary format, allows the user to select 300-, 1200- or 2400-baud communication and supports half or full duplex modes. In short, the Pocket Modem comes complete with everything

GARY BUSS

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Pocket Modem (Migent) — A 300/1200 Hayes-compatible modem that fits in a shirt pocket. Dual jacks. Cables included. *(modems)* **$169**

COMMUNICATIONS

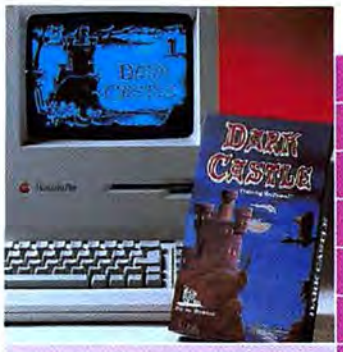
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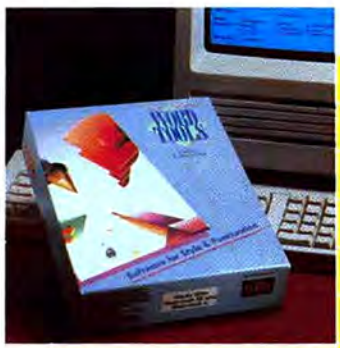
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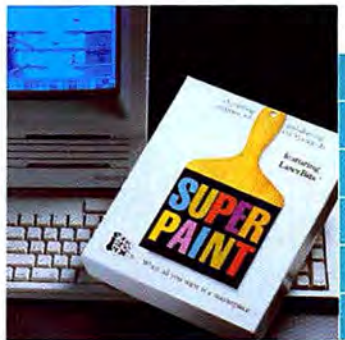
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QUICK CLICKS

you need to get a Macintosh on-line.

I used the Pocket Modem intensively for a couple of weeks without any hitches. There was only one aspect of its engineering that bothered me. Because it is so small, there is no room for either LEDs or a speaker. The absence of a speaker is nice if you don't want everyone within half a mile to hear the golden tones of electonic handshaking every time you go on-line, and I found it disconcerting to have to wait 20 to 30 seconds before I knew whether I had connected or not.

I also found the manual a little problematic. The section on communications software informs you that unless you plan to use *MacTerm*, you have to run the setup program to set the internal software switches. This configuration program is pretty intimidating for someone who's a first-time modem user. And in fact, since my telecom software was already set up to work with Hayes-compatible modems, I didn't need to run the setup at all—which I didn't. I ignored it, plugged the modem in and dialed. It worked fine. (This may not work for you, but it's worth a try.)

I also had some trouble reaching Technical Support. I tried three times and never got through. I hung up after being left on hold for 5 minutes. It's not a toll-free number, either.

The verdict: If you're in the market for a 1200-baud modem, have some telecommunications experience, don't mind the sound of silence, want the latest—and want to be able to take it with you—check this one out.—*Henry Bortman*

AST TurboScan ★★★★



List Price: $1899. AST Research, 2121 Alton Ave., Irvine, CA 92714. (714) 553-0340. Requires 512K+. Includes *SuperScan* software, version 1.2. Software not copy protected.

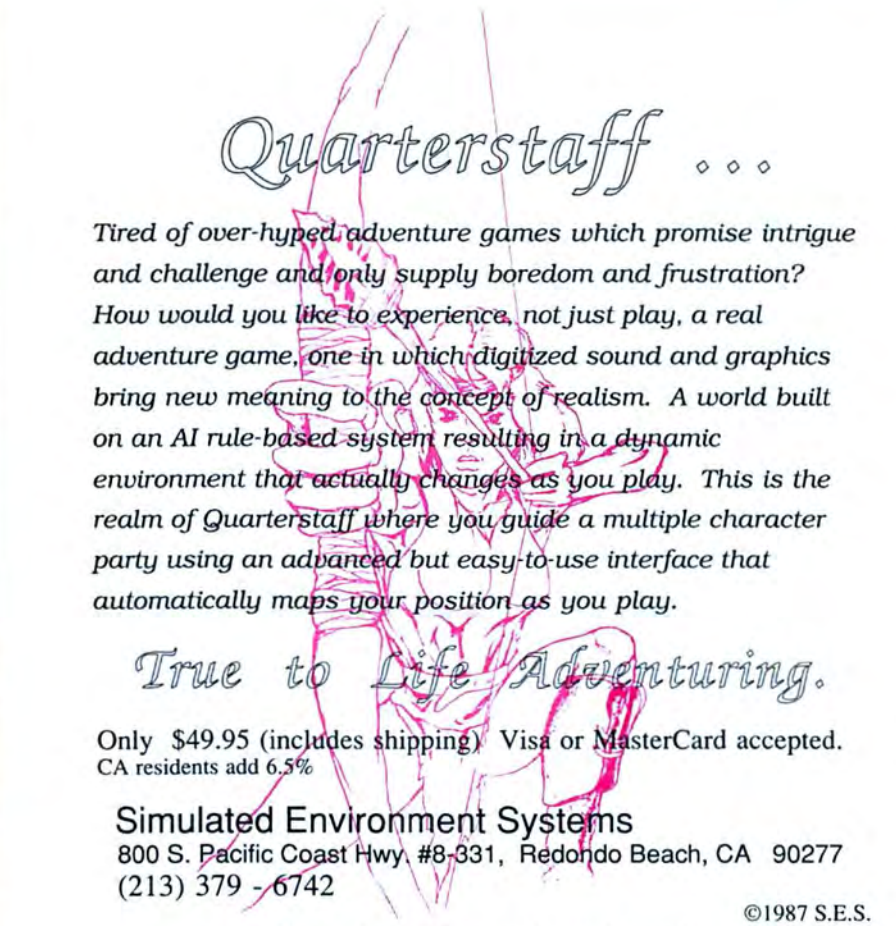
The AST TurboScan is a 300 dot-per-inch image scanner with sophisticated scanning and graphics editing software. As are several other image scanners, the TurboScan is based on the Microtek 300 scanner engine, but the *SuperScan* software and the price make this particular scanner an excellent buy.

TurboScan produces an electronic picture of graphics and text at resolutions from 72 dots per inch (Macintosh screen resolution) to 300 dots per inch (Laser-

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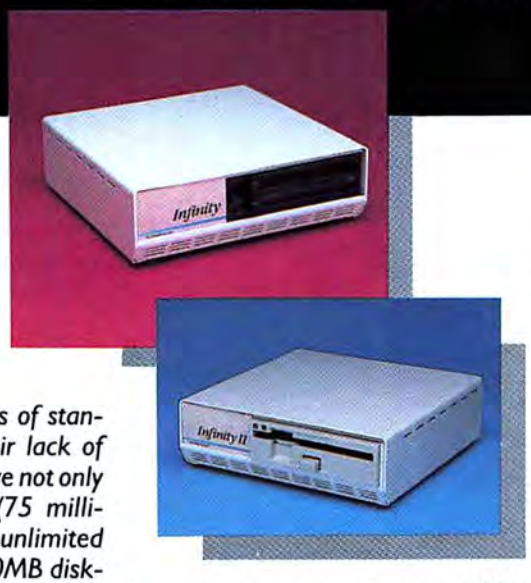


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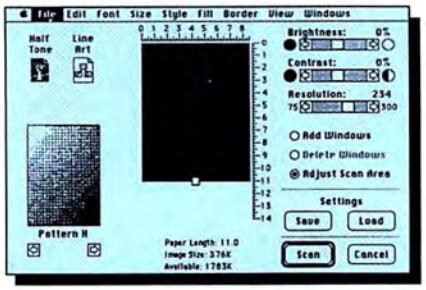
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QUICK CLICKS

Writer print resolution). Documents are fed into a slot at the top of the scanner. As with similar scanners, TurboScan pulls them through the machine. They come out another slot at the bottom. Thus it's virtually impossible to scan anything but a single page, so graphic images from books or magazines must be photocopied before they can be scanned. You should also use photocopies of documents that are difficult or impossible to replace, rather than the originals. If a page is not perfectly placed in the slot, it can get wrinkled, torn or even mangled as it's pulled through the machine.

That caveat aside, the *SuperScan* software supplied with TurboScan makes this a very powerful graphics and desktop publishing tool. *SuperScan* offers two modes of scanning, halftone and line art. The line art mode is fine for drawings or sketches that don't have many shading variations. Halftone mode is for images that have continuous gradations of shading. You can also mix line art and halftone modes, scanning part of the document as line art and part as halftone.



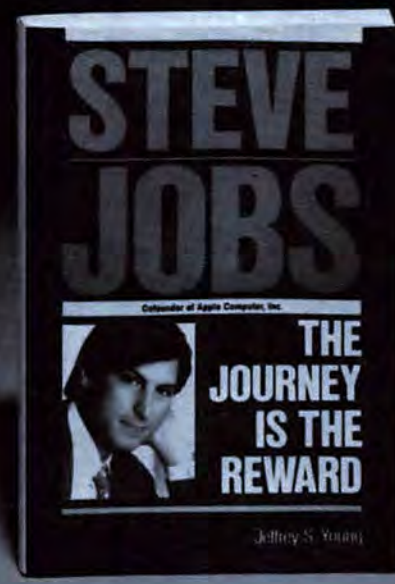
SuperScan scans images up to 8 ½ inches wide and 14 inches high. If you're scanning a page narrower than 8 ½ inches, it must be placed in the middle of the paper guide, not at the left edge, because the scanner has a page sensor in the middle of the slot that determines the position of the scanned image relative to the page. Select an area to scan by drawing a box on a reduced image of the page in the Settings dialog box. You can scan any portion of the page, using the horizontal and vertical rulers to place the area precisely.

SuperScan gives you a tremendous amount of control over the final appearance of the scanned image. If you select halftone mode for all or part of a drawing, you can specify one of 12 halftone patterns of increasing density. You can also specify the brightness and contrast levels, as well as the resolution, on sliding scales. It may take two or three scans to get a document just right, but by experimenting with the various settings

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Recommended by: SuperMac, Jasmine, AST, Peripheral Land, Infosphere, Quark, Blyth Software, and many others.

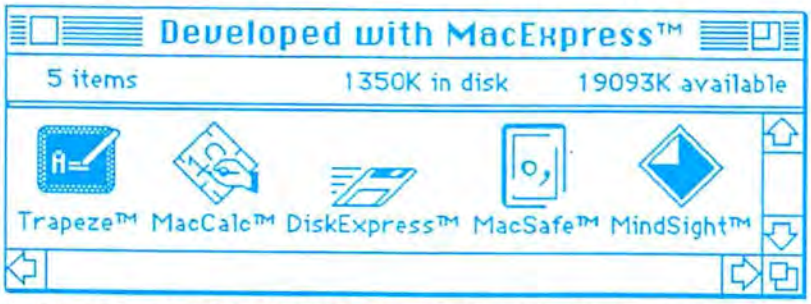
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QUICK CLICKS

you can tweak an image with a great degree of precision.

Working in anything greater than 72 dots per inch requires a tremendous amount of memory to store the resulting image. Scanning a full 8½ by 11 inch page at 300 dots per inch requires a megabyte or more of free memory. If you don't have enough RAM free to support the whole image, *SuperScan* uses "virtual memory processing," using your disk as a holding place for part of the image.

SuperScan has a full set of Paint tools so you can clean up a scanned image directly, without having to transfer it to another graphics or page layout program. You can print scanned images directly to a PostScript device, or save them in a variety of formats (*SuperScan*, *MacPaint* and TIFF) for export to other programs. You can also save an image as a PostScript or GPostScript (gray scale) text file.

TurboScan is a breeze to set up. Just connect its cable to the Macintosh and plug it in. There are eight DIP switches, but these are set at the factory and generally don't have to be changed. About the only maintenance required is to replace the scanning bulb occasionally. One additional bulb is included.

The manual is excellent, with clear explanations and illustrations. Technical support for the product is quick and helpful.—*MDW*

OGRE ♦♦♦♦



List Price: $30. Published by Origin Systems, 136 Harvey Rd., Building B, Londonderry, NH 03053. (603) 644-3360. Copy protected.

Ogre belies its name. This isn't a fantasy adventure where you pit yourself against ugly, flesh-eating giants. The ogre in this case is an intelligent cybertank that runs amok on a 21st century nuclear battlefield.

Ogre first appeared as a board game in the late '70s and was translated into computer form last year. Origins has ported it over to the Mac with more finesse than most companies give to their originals.

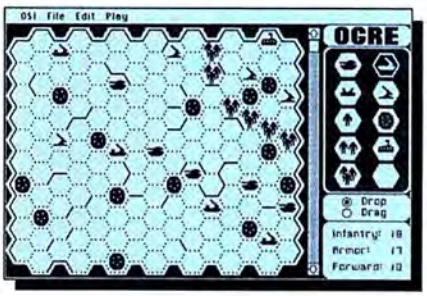
Ogre is played on the hexagon grid familiar to war gamers. As the defender you develop strategic and tactical plans to prevent the ogre from destroying your

GARY BUSS

QUICK CLICKS

Command Post. You get to use a variety of tanks, howitzers and infantry. Plan carefully since the ogre, with its superior fire power, is smart and can annihilate an inadequate defense.

The program's Field Editor allows you to customize your defense. It's all done by clicking on icons, then clicking on the grid. If you try to overload the map with heavy-duty artillery, a dialog tells you that such an action is outside of the rules, but it still lets you play. You can also use one of the game's preset field layouts.



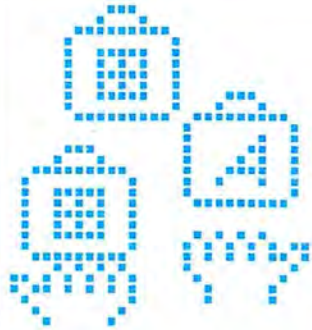
Just like a board-based war game, there are distinct movement and attack phases for each side. Drag your piece with the mouse to move and fire. Option menus pop up to prompt you to aim at the ogre's missiles, batteries, antipersonnel weapons or treads.

The options are safe—almost too safe. You have to click OK and choose DONE after nearly every operation and sequence. In real combat, you wouldn't have the luxury of second guessing. Also, there is no reason to click a preference for a target when there's only one target left.

The ogre is not as dumb as its mythical namesake. Artificial "smarts" compel the machine to make startlingly good combat decisions. It's best to fan out and attack the ogre as it runs up the gauntlet to your Command Post.

If desperate, try adapting kamikaze methods and run an armored unit into the ogre's hex in order to destroy a tread and disable further movement. Losing the Command Post doesn't mean you've lost the game. If your remaining forces kill off the ogre before it retreats from the map, you have a partial victory.

Ogre is a well-balanced, dynamic game. The algorithms take hit/miss ratios and damage from glancing blows into account. A two player option lets a friend (or opponent, anyway) play the ogre. The manual and its accompanying reference, *Strategy and Notes,* are well written and practically worth reading on their own. If a good strategy contest is what you're after, then give *Ogre* a shot.—*BT*



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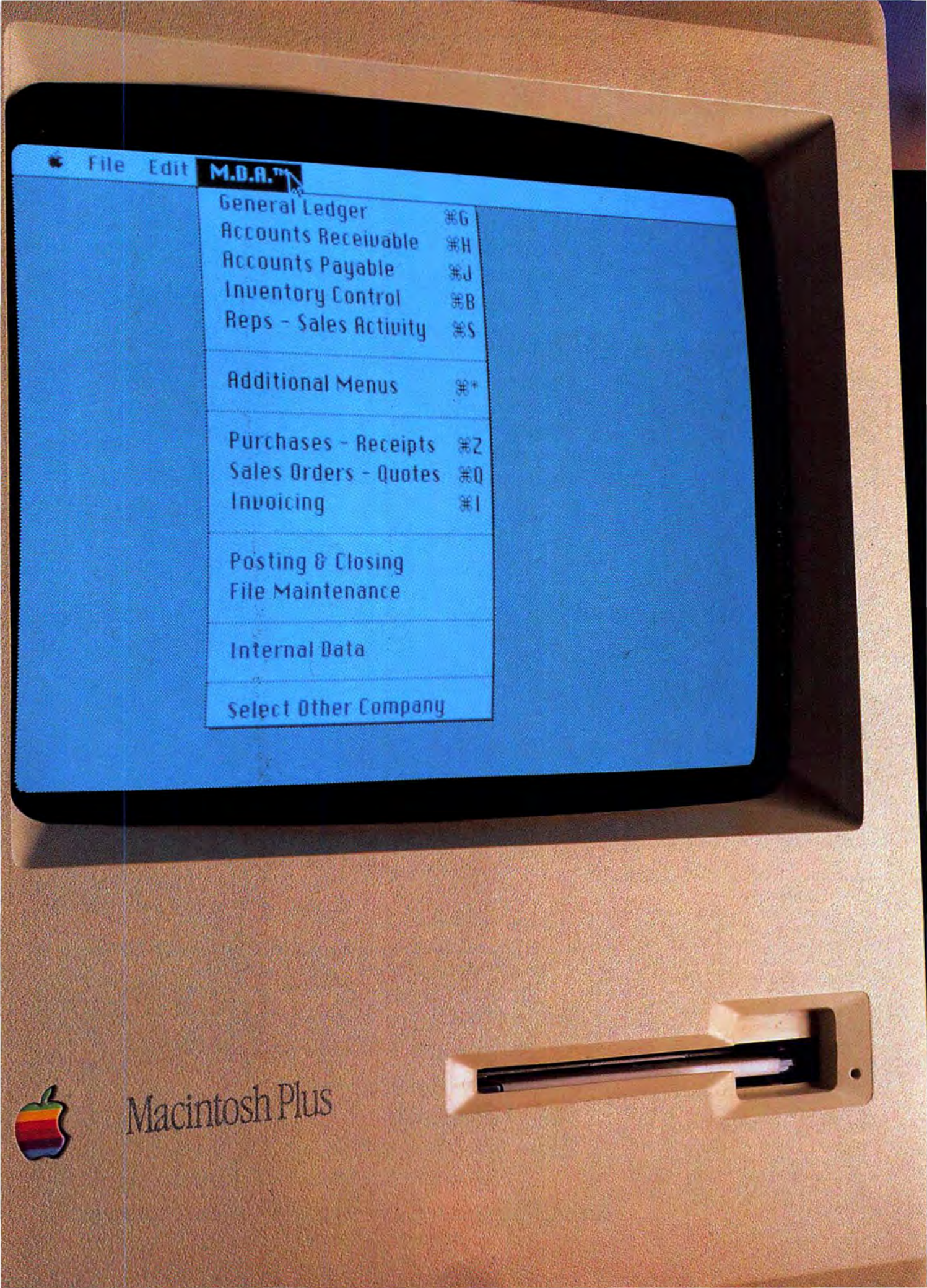
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An Entirely New Dimension

Once known as Silver Surfer, 4th Dimension is the data base the Mac has been waiting years for.

WELL OVER A YEAR AGO RUMORS started flowing in the Mac community. They mentioned the most wonderful Mac data base—and it was for sale! In France, where it was developed. It was written by Laurent Ribardiére.

It was so good that Apple Computer acquired the rights to market it in the United States. Development of an American version began. The project code name, "Silver Surfer," was heard when- and wherever Mac products were discussed.

Eventually, after much protest from third-party developers and much internal soul-searching, Apple dropped the project. It was promptly picked up by a new company, Acius. (ACI was the French publisher and Acius is the U.S. subsidiary.)

Acius was founded by Guy Kawasaki, who left Apple mere weeks after being made a director. Guy was joined by Scott Knaster, formerly head of Apple's Tech Support department and one of the best and most knowledgeable Mac writers around. They have a huge amount of faith in the product.

Has all the fuss been worth it? What exactly is this program?

4th Dimension is a relational data base management system. It joins *Double Helix* 2.0 and *Omnis 3 Plus* as one of only three Macintosh software packages that can be used to develop customized standalone data management applications. (At the time this review was being written, Ashton-Tate's *dBase Mac* was still not a released product.) These three DBMSs are also the only Macintosh data base packages that provide multi-user access. Let's take a look at *4th Dimension*'s features and capabilities and how they compare to *Double Helix* and *Omnis 3 Plus*.

ENTERING 4TH DIMENSION

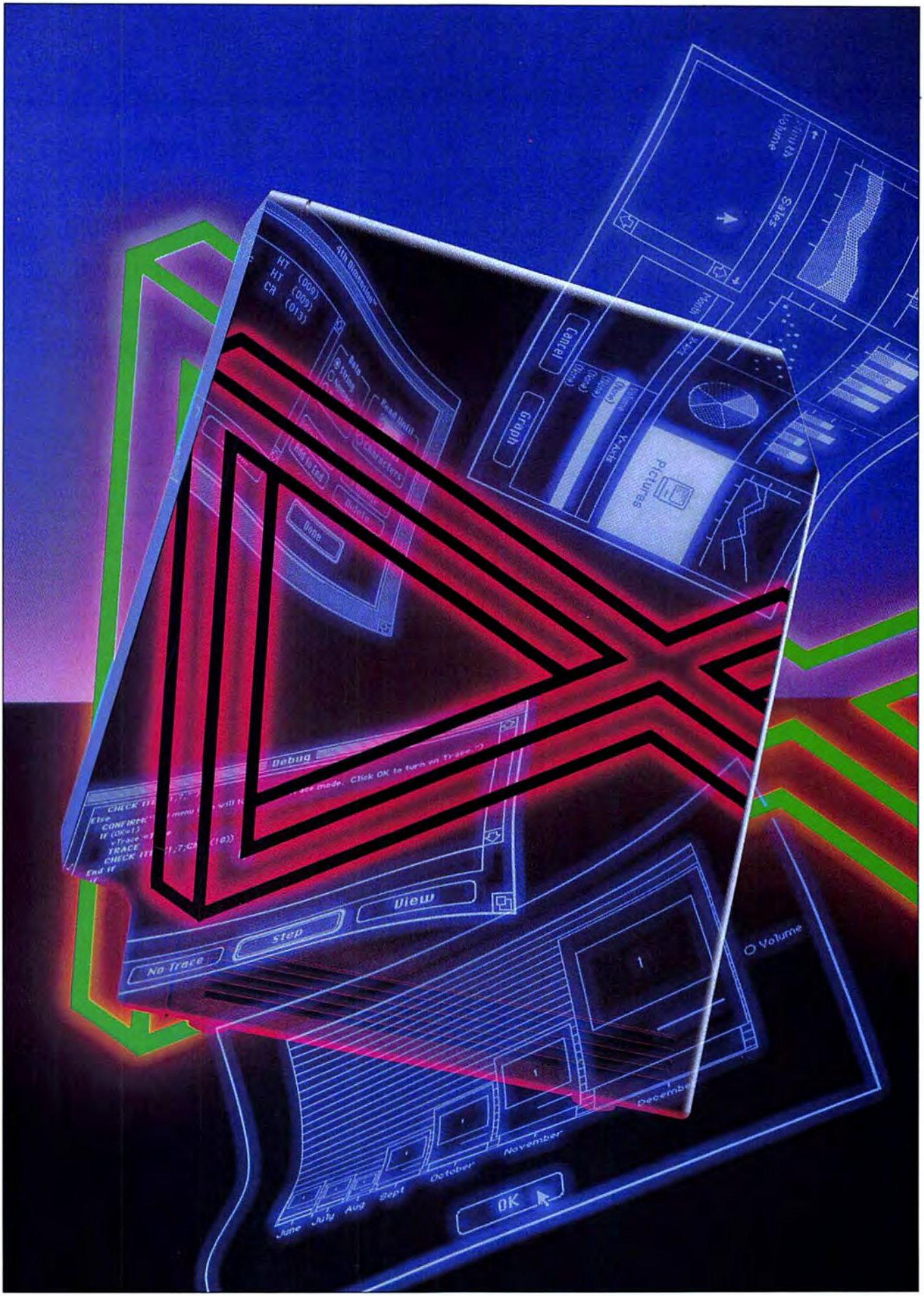
Interaction with *4th Dimension* takes place in one of three environments—Design, User or Custom. The Design environment is used to define data base structure, to define input and output forms, to write programs (called *procedures*) and to put together the elements of data management applications. To enter, modify or retrieve data without a complete application, you must transfer to the User environment. Both the Design and User environments are intended for the application developer. End users work with standalone applications in the Custom environment.

THE DESIGN ENVIRONMENT

The Design environment has five editors. These provide the facilities that create custom applications. They are:

1. The Structure Editor (creates and modifies data base structure).
2. The Layout Editor (creates and modifies input and output forms).
3. The Procedure Editor (creates and modifies procedures).
4. The Menu Editor (creates and

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modifies menus for custom applications).

5. The Password Editor (creates and modifies a hierarchical password scheme for data base security).

Each of these editors runs in its own window, more than one of which can be open at any given time.

THE STRUCTURE EDITOR

The Structure Editor window is a visual representation of a data base's logical structure. Because *4th Dimension* is a relational data base, it views data as if they were stored in two-dimensional tables, which *4th Dimension* calls *files*. Each rectangle in the Structure window represents a single file, which is made up of a collection of *fields*. Fields may contain any one of eight data types: alpha (alphanumeric strings of 2 to 80 characters); text (alphanumeric strings of up to 32,767 characters); real (numbers with fractional portions); integer (integers in the range ±32.767); long integer (integers in the range ±2,147,483,647); date; picture (graphics in a variety of formats, including scanned images); subfile (pointer to records in a subordinate file).

Double Helix supports the same range of data types (though some have different names and formats). *Omnis 3 Plus* cannot come close to either of the other packages in terms of data type flexibility, since it can handle neither graphics nor blocks of text longer than 280 characters.

Each file is represented in the Structure Editor window by a rectangle, whose title bar contains the file's name. The rectangle itself contains the names of the fields in the file, which can be added to, modified and removed at any time during the life of the data base. Field types and other field characteristics are set from the Change Field dialog box. For example, fields may be mandatory (a record will not be stored unless this field has a value). They may also be indexed; *4th Dimension* can then be instructed to verify that values in the index are unique. The Standard Choices option will store a set of values from which the user can pick when entering data; this is a useful option when a field should contain one of only a few permitted values. These field characteristics make it easy to perform data validation on individual fields. They can be used to ensure, for example, that a key field always has a value and that key values are unique.

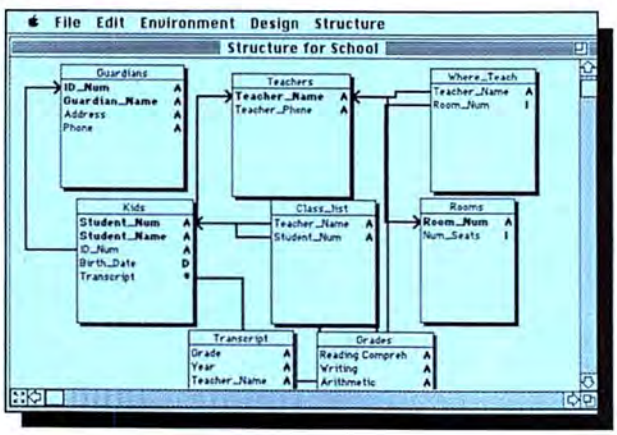
The drawback is that these characteristics cannot be applied to keys that are made up of more than one field (i.e., a concatenated key). The alternative is to either include an extra field in the file for the concatenated key, whose contents must be created within a procedure (a portion of a program), or to verify key integrity through a procedure. This problem arises because *4th Dimension* does not support derived fields; fields whose contents should not be entered directly from the keyboard but instead computed from other data must have their values computed by a program.

Omnis 3 Plus supports many of the same field characteristics as *4th Dimension* and does allow derived fields. However, unique indexing is not available on derived fields and after several months of trying, I have been unable to create a working *Omnis 3 Plus* sequence that would verify that a concatenated key was unique. *Double Helix* supports both derived fields and field level validation. Since validation criteria can be created with abacus icons, there is no limit on the type or complexity of the validation that can be performed.

4th Dimension's programming language is traditional, with the type of assignment, selection and repetition statements a programmer expects.

Relationships between *4th Dimension* files are established with links, which show up as dark lines between files in the Structure Editor window. For example, in a data base for an elementary school, there is a link from the file Kids to the file Guardians, which links a record for a child to the record for his or her legal guardian. Links provide the pathways for retrievals that require data from more than one file. Once established, links are very easy to use. However, if you decide, after the data base has been designed, that you need to retrieve data in some way not provided by an existing link, the data base structure will have to be modified. In contrast, *Double Helix*' Lookup tiles are more flexible, since they permit retrieval between multiple relations without pre-established links. *Omnis 3 Plus* also supports retrieval from multiple files. However, the setup and use of links (known as connected files) is more difficult than with *4th Dimension*.

Subfiles, which appear in the



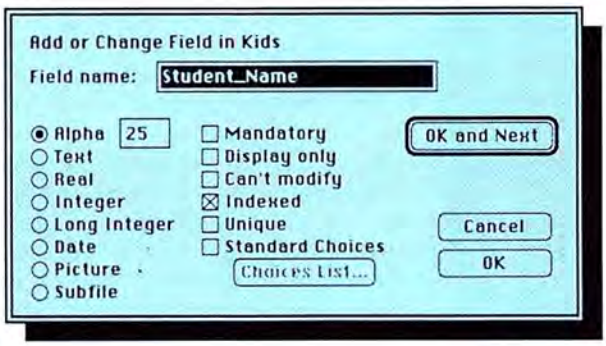
You can establish search logic with the Search Editor. The black arrows link files, which are represented by boxes. Subordinate files are linked by light gray lines.

Structure Editor window as separate files linked to another file by a light gray line, are complete files which are subordinate to another file. The school data base, for example, contains a subfile called Transcript which is subordinate to the Kids file. A subfile could also be used for line items for a purchase order. Strictly speaking, subfiles are not relational. (A relational data base should include no multivalued fields and no pointers between tables.) In fact, subfiles are characteristic of a hierarchical data base, since each record in a file "owns" many records in the subfile. This doesn't mean, however, that they aren't practical or that they shouldn't be used.

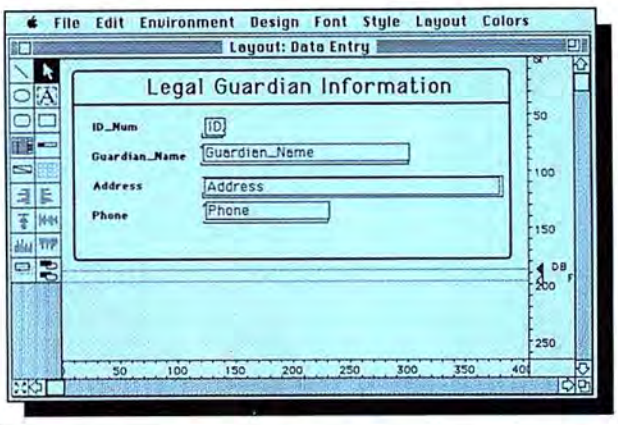
Neither *Omnis 3 Plus* nor *Double Helix* provides subfiles. *Omnis 3 Plus* doesn't particularly need them, since it is more of a network data base than a relational data base and its connected files act to create the one-to-many relationships similar to *4th Dimension* subfiles. *Double Helix* sticks closer to what theorists call a relational data base. A *Double Helix* design relies on multiple relations rather than subfiles to show one-to-many and many-to-many relationships. Whether *4th Dimension*'s strategy is better than *Double Helix*' is a matter of personal choice.

THE LAYOUT EDITOR

All user interaction with a *4th Dimension* data base takes place through the use of input and output layouts. A new layout often begins with a default form, which might be a single-record screen (used primarily for data modification) or a listing screen (used primarily for data retrieval). The Layout Editor's window looks much like any Macintosh Draw-type program with its palette of tools on the left. It can be used to modify a default layout or to create a custom layout from scratch. Layouts can include custom buttons whose functions are controlled by a *4th Dimension* procedure.



The Field Configuration dialog box sets parameters and types of information to be entered in particular fields.



The Layout Editor uses *Paint*-like tools to customize the input and output environments.

Of the three programs, *4th Dimension* provides the most flexible palette. *Omnis 3 Plus* is by far the most limited. Screen layouts are limited to a single, monospaced font; the only drawing tools are rectangles. Report definition is not WYSIWYG, but looks more like the procedure used in MS-DOS packages like *R:base System V*. *Double Helix* has the same amount of flexibility in layout design as *4th Dimension,* but doesn't provide the same range of drawing tools (for example, no line, circle, or round cornered rectangle drawing tools).

Though *4th Dimension* layouts are tied to a single file, they can include data from any linked file. Whenever data from a linked file are included, *4th Dimension* automatically writes a *layout procedure,* a program which loads the linked data. Layout procedures are programs that are run whenever their associated layout is used. (The other type of procedures are *global procedures,* which are invoked from menus in the Custom environment.) These procedures can be modified and enhanced with the Procedure Editor.

THE PROCEDURE EDITOR

The Procedure Editor is used to write and modify both global and layout procedures. *4th Dimension* comes with a full-featured, Pascal-like programming language. Programmers can work with either listings, the most common way, or with flow charts. However, once a procedure type has been chosen, it can't be changed for that particular procedure. The Procedure Editor window contains four areas: an editor area, a keywords list, a list of fields and a list of *4th Dimension* routines—functions that perform actions specific to the *4th Dimension* data base environment. *4th Dimension* routines provide functions that can give a *4th Dimension* application a Macintosh-like feel, such as enabling and disabling menus when appropriate. They also can manipulate graphic objects—controlling the scaling and the layering (the "pen mode") used when graphics are displayed—and draw eight different types of graphs based on stored data.

An Entirely New Dimension

At first glance, the Procedure Editor window may look a bit like *Omnis 3 Plus'* Sequence window. However, there are major differences in both the way programs are written and the types of programs that *can* be written with the languages provided by the two packages. To create an *Omnis 3 Plus* sequence, the designer must click on radio buttons to enter a command into a sequence. By contrast, *4th Dimension* provides a real text editor, into which language statements and comments can be typed directly or entered by selecting a command, field or routine from the lists at the bottom of the window. *4th Dimension*'s language is a traditional programming language, with the type of assignment, selection and repetition statements a programmer expects. Anyone comfortable with Pascal will find *4th Dimension* programming easy to learn. *4th Dimension*'s routines are enhancements to the language and do not replace well-understood programming constructs. Outside of its selection and control structures, *Omnis 3 Plus'* sequence commands are rather arcane. The "Prepare for Update" mode, for example, makes it more difficult than necessary to control data entry and is cancelled by any commands that retrieve data.

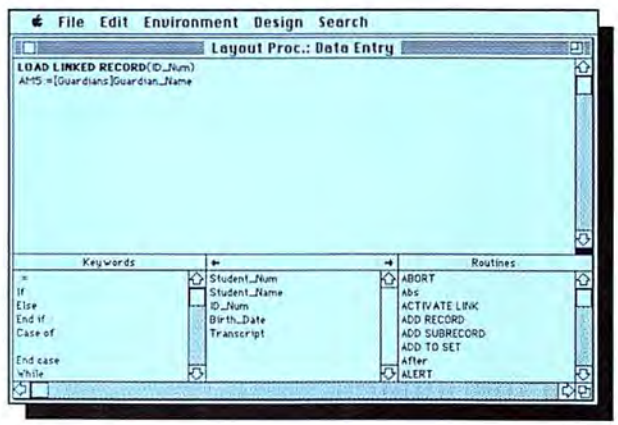
In terms of programming, it's impossible to compare *4th Dimension* to *Double Helix*. *Double Helix* has no programming language, but it doesn't need one. Virtually anything that can be done with a *4th Dimension* procedure can be done with *Double Helix* abacuses. (The exception is in the production of graphs, something *Double Helix* doesn't support directly.)

THE MENU EDITOR

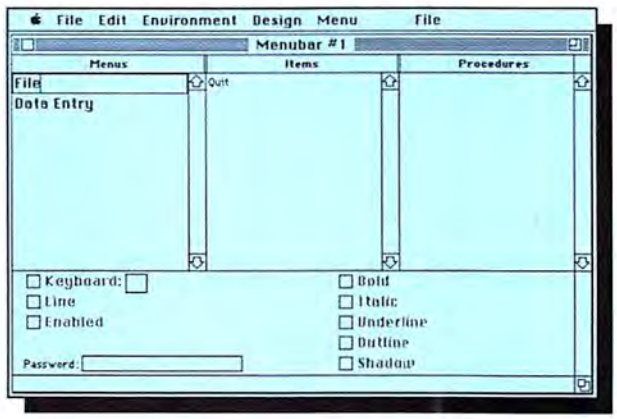
4th Dimension's Menu Editor allows a data base designer to completely customize the Macintosh menu bar for standalone applications. (The Apple and Edit menus are supplied automatically; the application designer does the rest.) The leftmost section of the window shows a list of menus in the order in which they'll appear on the menu bar. The center section contains the menu items for any currently active menu title. Associated with each menu item in the center section is the name of a procedure which is invoked when the menu item is selected. If a menu item has no procedure associated with it, *4th Dimension* assumes that it means "quit." The Menu Editor's window can also assign keyboard equivalents to menu items, assign passwords and vary the style of menu items.

Double Helix and *Omnis 3 Plus* are very similar to *4th Dimension* in the creation and management of custom menu environments. *Omnis 3 Plus* custom menus are tied to sequences (that is, each menu item invokes a sequence). *Double Helix* custom menus are tied to views, each of which invokes a single application function.

The Procedures Editor modifies functions and routines using a programming language that is similar to Pascal.



Standalone data base applications are modified using the Menu Editor.



THE PASSWORD EDITOR

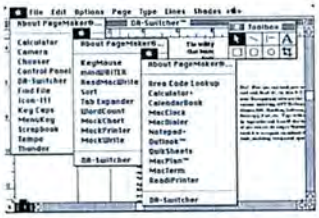
The Password Editor is used to create a hierarchy of passwords (the hierarchy can have as many as 32,767 levels). The passwords are assigned with the Menu Editor to menu commands or with the Layout Editor to layouts. Once a password is assigned, any password above it in the hierarchy can access its command or layout. (The password at the root (top level) of the hierarchy has access to the entire data base.) The Password Editor's window is the only place where passwords can be changed; it also records the number of uses and last date each password was used.

4th Dimension's password scheme is not as flexible as that provided by either *Double Helix* or *Omnis 3 Plus,* since both of these packages can customize access by user. *4th Dimension*'s passwords are an all-or-nothing affair; either you have access to a layout or you don't. The other two DBMSs not only permit or restrict access, but specify what kinds of access users might have. For example, you might be able to retrieve data using a particular layout, but not be able to add or modify data.

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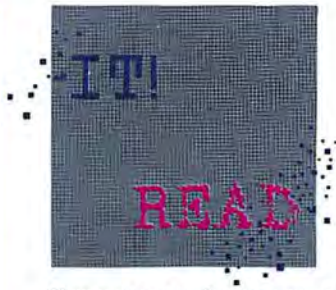
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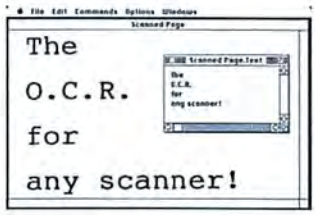
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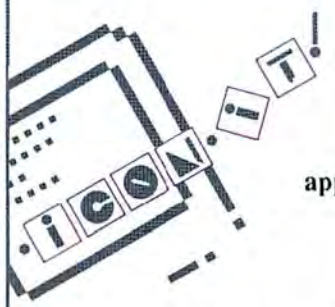
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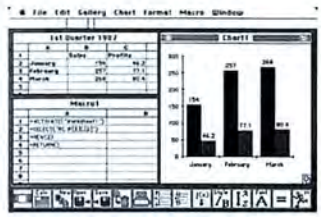


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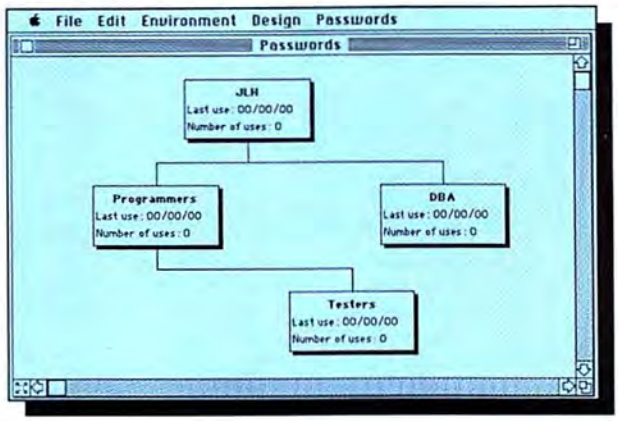
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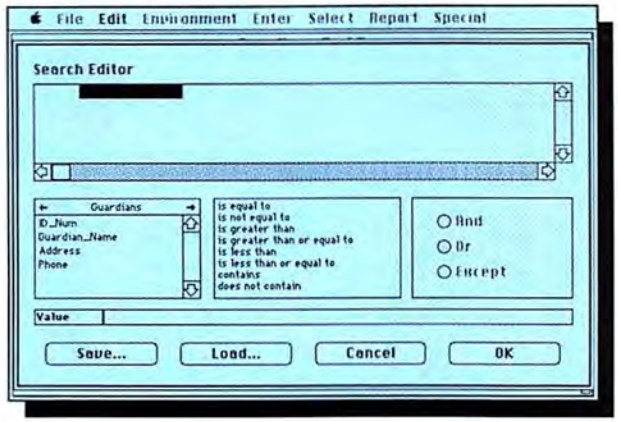
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An Entirely New Dimension



A hierarchy of passwords of up to 32,767 levels can be created with the Password Editor.



Choose SEARCH from the Select menu to enter the Search Editor.

Omnis 3 Plus supports detailed customized access for up to eight users; *Double Helix* has no arbitrary restriction on the number of users for whom an environment might be customized.

THE USER ENVIRONMENT

In the User environment you can test layouts and procedures; no data modification or retrieval can be performed from the Design environment. When you switch from the Design environment, the User environment uses the default output layout for the most recently accessed file. Both file and layout can be changed by selecting Choose FILE/LAYOUT from the File Menu.

When an input layout has been selected for use, enter data by selecting NEW RECORD from the Enter menu. *4th Dimension* displays the input layout and waits for either a press of the Enter key or a click on the Enter button. This procedure is similar to that used in both *Double Helix* and *Omnis 3 Plus.*

Output layouts that are designed to produce list-type forms have a variety of uses. For example, the simplest way to find one or more existing records for modification is to select them with the mouse on an output layout. Selecting MODIFY RECORD from the Enter menu will then bring back the default input layout for that file with the first selected record. Once a single record has been selected for modification, the input layout supports sequential access to records in the file. Both *Double Helix* and *Omnis 3 Plus* work in a similar manner, though neither requires a previous record selection before the sequential access commands are effective.

The order in which records appear in output layouts can be changed by sorting the file. *4th Dimension* supports virtually unlimited sort keys (you can sort by every field in the file) in either ascending or descending order. *Omnis 3 Plus* will also sort files. *Double Helix* does not sort, but relies instead on indexes to affect the logical order of records in output forms. The records which appear in a *4th Dimension* output layout can be restricted by creating and applying search criteria. The Search Editor is entered by selecting SEARCH from the Select menu. This gives you a window for defining compound search criteria. This way of constructing search expressions is very similar to *Double Helix* query icons and *Omnis 3 Plus* search formats.

THE CUSTOM ENVIRONMENT

4th Dimension provides development tools to create customized standalone applications that are virtually indistinguishable from any other application that adheres to the Macintosh user interface guidelines. The Menu Editor, discussed earlier in this review, forms the backbone of a custom application, allowing you to access procedures through menu selections. Custom applications can also include dialog and alert boxes, all types of buttons and scrollable areas on layouts.

Entry to the Design and User environments can be prevented in one of two ways. If the user is working with the complete *4th Dimension* package, then the designer can set *4th Dimension*'s Preferences to launch the Custom environment. So long as the custom application menu bar does not contain the Environment menu, the end user cannot leave the Custom environment. The second way to keep end users from the Design and User environments is not to provide them with the complete *4th Dimension* program, but to give them only the run-time version. The run-time version will only run standalone applications; it cannot be used to make changes in the data base structure or in an application.

UTILITIES

4th Dimension is shipped with a set of standalone utility programs for the use of data base designers and administrators. *4D Tools,* for example, is a program that can be used for a variety of data base maintenance activities, including cloning of a data base (making a copy of the data base structure), repairing damaged files and resizing data files used in a

DaynaFile. The Search For IBM PC File Compatibility Is Over.



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Power Tools For The Mind

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Please circle 35 on reader service card.

multi-user environment. *4D xRef* produces a cross-reference report showing where layouts, procedures, variables and fields are used through out the data base.

Since *4th Dimension* creates a large number of files and names them with its own naming scheme, it is risky to change files names. The *4D Renamer* utility, however, can be used to change the name of a data base. Once a new name for the data base is supplied, the utility will properly rename all files used by that data base. Other utilities include *4D External Mover,* which imports program code written outside *4th Dimension,* and *4D Customizer,* which can tailor the Mac environment.

DOCUMENTATION

4th Dimension comes with four spiral-bound manuals, a slim stapled booklet about the utilities and another small booklet containing errata and enhancements made since the documentation was printed. The documentation is aimed at data base developers, not at someone who will be working with a custom *4th Dimension* application. Even so, it is remarkably complete and clear.

The tutorial goes along with the sample data base provided on the Examples disk. If you work through it, you will get good, in-depth exposure to the essential parts of *4th Dimension*. The *User's Guide* provides complete documentation for using the Design environment's editors and the User environment's functions. It also contains suggestions about data base design, an introduction to the control statements in the programming language and the creation of a custom user interface. It ends with a menu command reference section and a description of *4th Dimension* disk files.

The other two manuals, the *Programmer's Reference* and *Command Reference* manuals, are primarily for programmers. The *Command Reference Manual* describes all of the commands in the *4th Dimension* programming language in alphabetical order. The Programmer's Reference Manual discusses *4th Dimension* programming; it is organized by function.

On the whole, the documentation is excellent. It is as good as that supplied with *Double Helix* and is better than *Omnis 3 Plus',* which does not provide anywhere near enough programming examples, especially considering that its sequences are so unlike traditional programming languages.

SUPPORT

4th Dimension comes with no on-line help. For novice software users, that is often considered a drawback. However, *4th Dimension* is not really a package for novices, and experienced data base application developers will not miss on-line help. Given the most likely users of the DBMS and the excellence of the document, the absence of this type of support is probably not important.

Support from the vendor is another issue, however. *4th Dimension's* documentation makes no mention of how or where support can be obtained; the manuals don't even contain Acius' phone number. In contrast, Odesta has excelled in their telephone support for *Double Helix.* Blythe Software also provides telephone support for *Omnis 3 Plus* and has a network of independent vertical application developers.

[*Editors Note: We hope the support situation will improve. Acius is a new company and a support program is hard to get going. They are aware of the problem and claim to be taking steps to fix it. Until you are assured of* 4th Dimension *support, though, tread with care.*]

THE BOTTOM LINE

4th Dimension is an extremely powerful and flexible data base management system. Anything *Omnis 3 Plus* can do, *4th Dimension* can do better. If I were Blythe Software (the publishers of *Omnis 3 Plus*), I'd be very worried; their only saving grace may be their large installed base. In terms of competition with *Double Helix,* however, there is very little. The two DBMSs, while relatively equal in terms of power and flexibility, are totally different in the way in which a data base designer interacts with them. Designers who want a more traditional data base system based on a programming language should probably select *4th Dimension*. Designers who do not want to program should probably select *Double Helix*. Some totally unscientific crystal ball gazing suggests that the market will continue to support both *4th Dimension* and *Double Helix,* since they appeal to entirely different kinds of users. If *dBase Mac* is ever released, it (based on its beta), like *Omnis 3 Plus,* will have a hard time competing against *4th Dimension*.

Should you buy *4th Dimension?* Is it worth the $695 retail price? The answer is a qualified "yes." If you are looking for a traditional DBMS that requires programming to produce custom applications and are able to work independently, without a great deal of vendor support, buy *4th Dimension*. It will do everything you need, and then some, and will prove itself to be well worth the cost. However, if you don't want to program, you'll probably be happier with *Double Helix,* also well worth its price for custom application development without programming.

JAN L. HARRINGTON IS AN ASSISTANT PROFESSOR OF COMPUTER INFORMATION SYSTEMS AT BENTLEY COLLEGE, WALTHAM, MA. SHE IS THE AUTHOR OF *RELATIONAL DATABASE MANAGEMENT FOR MICROCOMPUTERS: DESIGN AND IMPLEMENTATION* (HOLT, RINEHART & WINSTON, 1988).

MACUSER RATING

4th Dimension ★★★★½

Follows Mac Interface	■ ■ ■ ■ ■
Printed Documentation	■ ■ ■ ■ ■
On-Screen Help	None
Performance	■ ■ ■ ■ ■
Support	■ □ □ □ □
Consumer Value	■ ■ ■ ■ ■

Comments: *4th Dimension* is a powerful data base management system intended for the development of standalone data management applications. It includes a Pascal-like programming language which supports the features of the Macintosh user interface. **Best Feature:** Provides a complete application development environment. **Worst Feature:** Lack of vendor support. **List Price:** $695. Published by Acius, 20300 Stevens Creek Blvd., Ste. 495, Cupertino, CA 95014. (408) 252-4444. Not copy protected.

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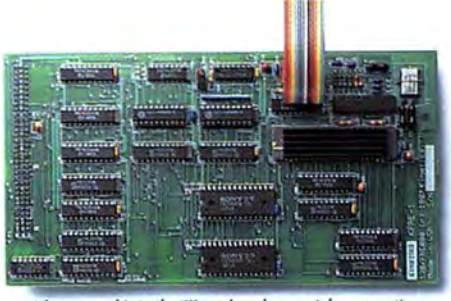
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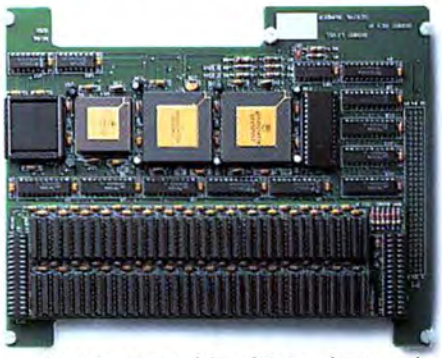
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How to build your

You've heard about them. You've read about them. By now, you've probably even seen them.

Our latest leaps in technology, the new Macintosh™ SE and Macintosh II personal computers, have been getting their share of press.

But to add to what you may already know, we'd like to tell you more about their most powerful feature: expandability.

It's something we made possible by adding expansion slots. So you can easily customize your Macintosh to meet the demands of any business.

You can, for example, set up a system that's perfect for major-league number crunching. Or add features to give you even greater power for Apple Desktop Publishing, like displays as big as 21 inches.

The SE sports one expansion slot. While the Macintosh II takes the idea of expansion to the extreme–with six 32-bit NuBus slots. Which have the good sense to configure themselves, and require you to do nothing more than plug in the options of your choice.

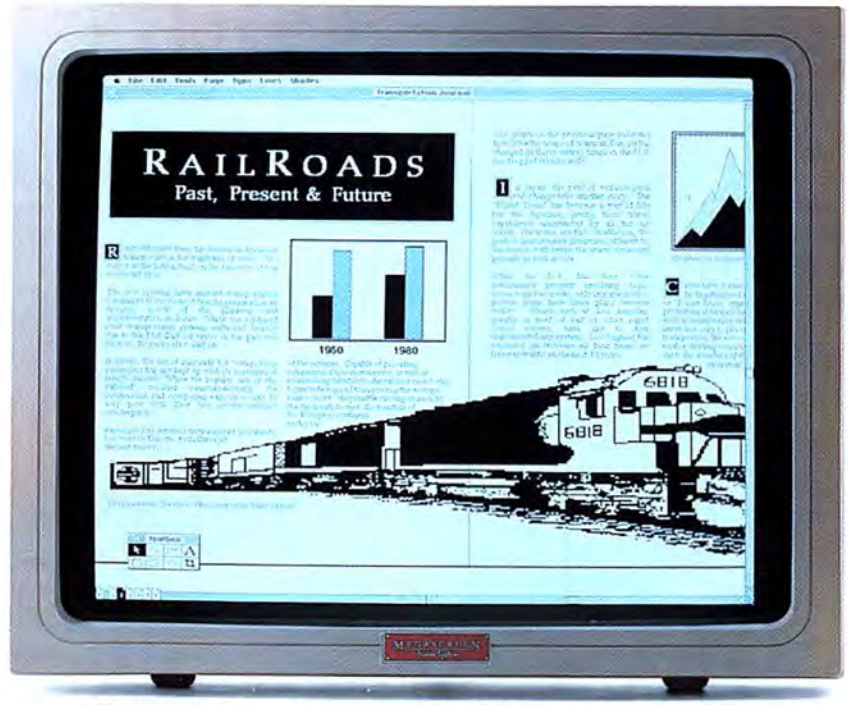
Such as an 80286 co-processor card that lets you run programs written for MS-DOS computers. And a video card that produces near-photographic images

Presenting the Apple Extended Keyboard. Complete with 15 programmable function keys, as well as separate cursor and numeric keypads.





Via the expansion slots, you can add an AST co-processor card to either the SE or Macintosh II.



With either the SE or the II, a large-screen monitor (available from other manufacturers) can give you the big picture. And show you up to two pages at once.

Using one of the II's six slots, you can tie into the company mainframe or an office network like Ethernet.





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Build yourself a power station. The Macintosh II has a lightning-fast 32-bit Motorola 68020 processor, a 68881 co-processor and six NuBus expansion slots.





The Macintosh II Video Card can generate colors 256 at a time, at up to eight bits per pixel. Using a palette of over 16 million colors.

own Macintosh.

from a palette of over 16 million colors.

The new Macintosh computers are built to be customized in other ways, too.

You can set up your SE with up to four megabytes of memory, so it has the power to run the most sophisticated programs. And configure the II with up to eight megabytes of memory on the main board, or a walloping 1.5 gigabytes using the expansion slots.

As for storage, there's plenty. With either computer, you get the option of an internal hard disk. Or an external one that can store up to 80 megabytes.

You can also choose between two keyboards. One of which has 15 function keys that come in handy when delving into special applications.

And as you might expect, we've done more than just give you a very good way to build the Macintosh of your dreams.

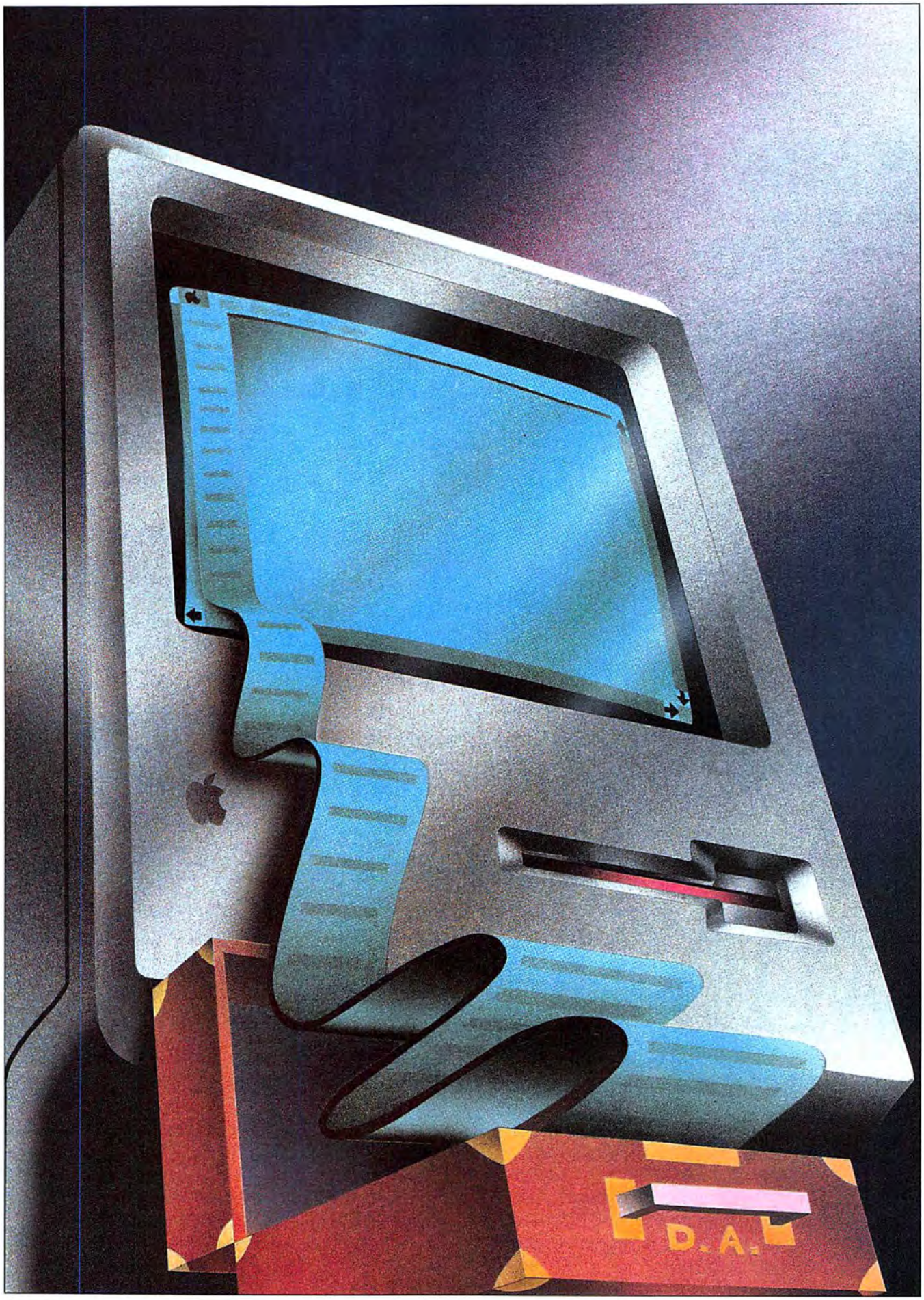
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JIM LUDTKE

Packing 'Em In

Suitcase lets you use all of your fonts and all of your DAs all of the time.

FONTS AND DAS = MAC? TWO OF the things that make the Mac what it is—the most widely copied and easiest to use computer interface of recent years—are fonts and desk accessories (DAs).

Being able to have as many fonts as you want and to use them at will has revolutionized computer output, changing it from something you put up with to something that you prefer to use. And DAs take the IBM concept of always available, memory-resident utilities to heights no other computer (of any size) can begin to reach. But with all the good they provide, they have a drawback. Fonts and DAs also multiply like, well, rabbits, and it's the rare Mac owner who doesn't soon have too many to use all of them at once.

There are workarounds. Back in our April, 1987 issue we published Billy Steinberg's article on how to hack Apple's venerable *Font/DA Mover* so that you could install (and thus have on constant call) more than the 15 DAs Apple allows. That process involves working inside your programs using both *Fedit* (or some similar program like *MacTools*) and *ResEdit*. While the process isn't hard, it also isn't for the faint of heart.

INITIAL FREEDOM

So what do you do if you have—and want to use—more DAs and fonts than Apple System software allows? Well, there are several products that swap sets of DAs in and out of your *System*. However, these generally have severe limits, because you need to be careful to avoid ID numbering conflicts. The Mac may be showing you names, but it's actually looking for and using numbers: resource ID numbers, directory ID numbers, just numbers. And you better not confuse it by giving two things the same number. The results of doing so are often spectacular and rarely what you want.

There are also some programs, DAs and FKEYs that let you use up to a few uninstalled DAs or fonts. Some of these are pretty slick and popular (among the best are Lofty Becker's shareware *Others* and *Fontsie* and the little DA known as *Double Apple*), but they take time and effort to install (often using precious DA and FKEY slots themselves) and have a limited ability to help.

An ideal solution would be a program that transparently lets you have access to *all* your fonts and DAs all the time. That would be a dream come true.

And with very minor limitations, *Suitcase* makes that dream a reality. *Suitcase* is a small (13K) program that you simply drag into your System folder. Then move the DAs and fonts you want to have access to into files or folders with the names "DAs," "FKEYs," "Fonts" and "Fonts/DAs." Move these files and folders (you can mix and match) into your System folder. The final step is restarting the Mac.

When you next pull down the Apple menu you'll discover all the DAs are there, ready to use. And at the top, there's a special DA called *Suitcase* that lets you access fonts and DAs still not installed (for example, you can check out a new DA on a friend's disk) and otherwise manage your fonts and DAs.

HOW AND WHY

Suitcase is what is called an INIT. This is a special type of Macintosh file that is installed or run as part of the startup process. These only work with *System* 3.0 and higher, so you must be using such a *System* to use *Suitcase*. (Of course, you should be using the most recent Apple recommended *System* for your hardware configuration.) *System* 3.X and *System* 4.X treat INITs in slightly different ways, but in the case of *Suitcase*, the results are identical.

When *Suitcase* is run as part of the startup process it looks for the files and folders with its names. It opens the files and looks into the folders, opening any suitcase files it finds there.

Normally, only the *System* file remains open all the time—that's why fonts and DAs had to be there. *Suitcase* keeps its suitcase files open all the time also.

There's now a real possibility of having duplicate font or DA names. What happens in that case is that the duplicate names are omitted when the Apple or Font menu is created. But while the name might be the same, the fonts and DAs involved might be different. Thus, it's important to know which one *Suitcase* will be opening.

Fortunately, the Mac opens files in a very strict and known order. The manual explains this order in detail. You should read this section of the manual carefully.

THE LIMITS OF FREEDOM

You must have at least 512K of RAM. And while *Suitcase* is very careful about DAs (making sure you won't be bothered by numbering conflicts) you have to help a bit with fonts. All sizes of a particular font must be in the same file or you will not have access to all sizes of that font. For example, if 9- and 12-point Helvetica are installed (in the old

BY STEVEN BOBKER

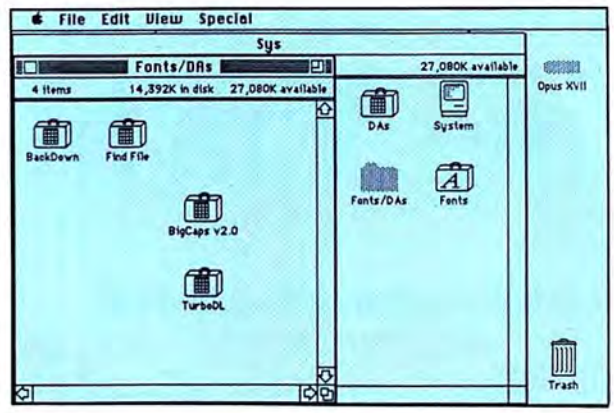
Packing 'Em In

manner) in the *System* file and 10-, 18- and 24-point Helvetica are in a font (suitcase) file called *Fonts* in the System folder, *Suitcase* can only make 9- and 12-point Helvetica available. Fortunately, there's a simple solution.

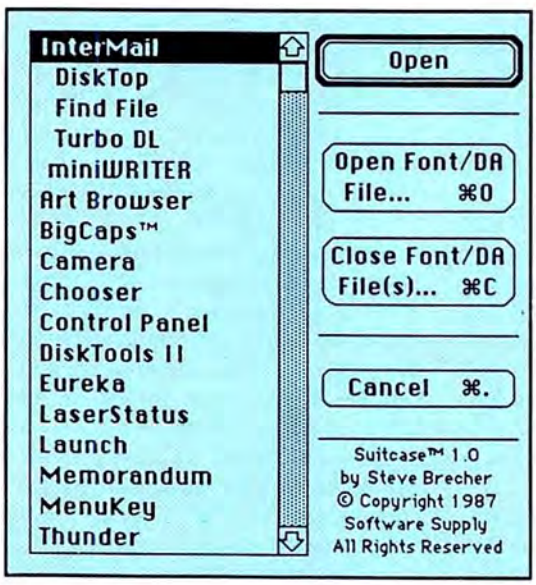
Apple's *Font/DA Mover* has much looser restrictions on the number of fonts or DAs it will put into an ordinary (not a *System*) file. So open *Font/DA Mover* and create a new file. Call it "Fonts" and pack all sizes of all your fonts into it. (To make things easy though, leave all sizes of Chicago, Geneva and Monaco in the *System* file—*Font/DA Mover* won't remove all sizes of them from a *System* file.)

Now create another new file (call it "DAs") and move all your DAs into it. Now remove all but one DA from the *System* file. You should leave one DA (any one will do) in your *System* file just in case *Suitcase* doesn't get loaded. If there are no DAs and *Suitcase* doesn't load, you're likely to have serious problems.

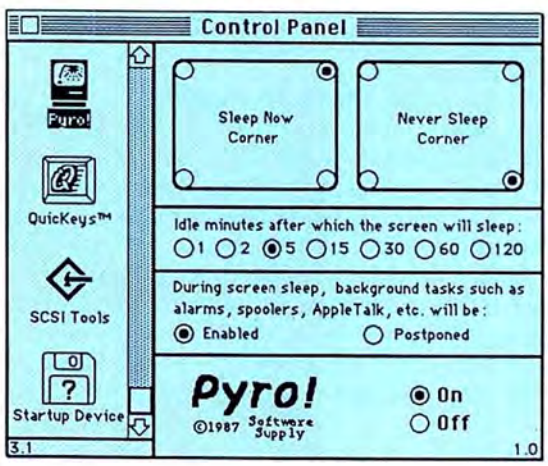
Suitcase may not load for several reasons. It might have been removed from the disk it was on. Or, if you're working on an HFS disk, it might have been removed from the System folder (it doesn't matter where it is on the disk if you're running MFS). Or, you might hold the Shift key down when starting the Mac—that prevents *Suitcase* from loading.



These are suitcase files of the type *Suitcase* opens. It also opens suitcase files in folders with these names. All of the suitcase files shown here will be opened when the Mac is started. Any and all fonts and DAs in them will be available.



The *Suitcase* DA. This is where you can manage your fonts and DAs. Use the Open File and Close File buttons to access fonts and DAs not installed either in the *System* or in a currently open suitcase file.



This *Pyro!* control panel is reached by clicking on the *Pyro!* icon in the Control Panel. You need *System* 4.0 or higher for this to work.

ADDED BAGGAGE

You can have no more than ten suitcase files open at any one time.

That's because the Mac has a limit on the number of files it allows to be open at once. If *Suitcase* didn't restrict itself, you might, under some circumstance, not be able to open any additional files. Considering that you can put up to 52 DAs (that's *Font/DA Mover*'s limit) and up to 200 fonts (each size counts as one—10-point Bookman and 12-point Bookman would count as 2 of your 200) in a file, you shouldn't run out of suitcase space. If you do, however, remember that each suitcase holds 52 DAs and 200 fonts. There's no need to keep them separate. (One small note: Although you can theoretically load 520 DAs in suitcase files, you'll only see the first 512 opened. That's an internal *Suitcase* limitation. Please let us know if this affects you.)

ADDED BENEFITS

If you are still using a Mac with the original 64K ROMs you know that fonts and DAs appear in the order they were installed, the latest on top. *Suitcase* alphabetizes these menus for you automatically.

If you have a Mac with 128K or 256K ROMs, you'll find that *Suit-*



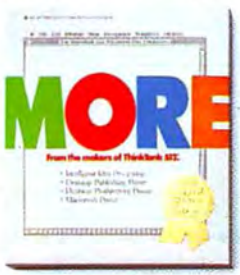
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case also constructs long font menus much faster than the Mac normally does, because it uses a new and advanced sorting routine. The days of waiting for what seemed like forever for your many fonts to appear are over.

Suitcase can be fairly heavily customized by advanced users. The manual gives all the details. Unfortunately, the details fall right in the middle of sections covering more basic operations. This can make the otherwise outstanding manual somewhat intimidating. The solution (aside from revising the manual) is to pick and choose the parts you read.

FIREWORKS DISPLAY

Suitcase comes with two added bonuses: *Pyro!* and an evaluation copy of Software Supply's other new product, *PowerStation*. Of the two, *Pyro!* (written by Billy Steinberg and Steve Brecher) is the more useful. It is the best screen saver or blanker yet created for the Macintosh. (*PowerStation* is the best *Finder* alternative yet developed. However, it's not for everyone. Check the sidebar for more details on *PowerStation*. It, along with other *Finder* alternatives will be fully reviewed in an upcoming issue.)

Screen savers are very important, especially for those of you who leave your Mac on all day (or like me, all the time). An ordinary static image eventually "burns itself in" on the screen. That is, a faint rendition will be there forever, even when the original image is no longer being displayed. This is not a Mac-specific problem, but rather a trait of all CRTs. It could happen to your TV if you left it tuned to a never-changing image for a long time.

Screen savers, by blanking the screen, prevent burn-in. However, if all a screen saver did was blank your screen, you wouldn't know if your Mac was actually on or off. So what all screen savers do is create some pattern and display it at full brightness every few seconds in a different location. That's safe for all screens.

There have been some ingenious screen savers. For example, *AutoBlack*'s moving pattern is a small analog clock that shows the correct time (if the Mac's internal clock has been set correctly).

Pyro!'s patterns are a bit different. They're fireworks that launch from the base of the screen, rise up and explode in a burst or bursts, much like real fireworks. (If the application you're running uses a lot of RAM and there isn't enough memory left to show the fireworks, you'll get roving Apples.) And if you're fortunate enough to have a Mac II with a color display, the fireworks will be in full and glorious color.

What makes *Pyro!* really different and better is the control you have over all aspects of its operation. Normally *Pyro!* simply blanks the screen and starts its fireworks after a user-specified period of idleness. However, you can make *Pyro!* active at any time by moving the pointer into the upper right (you can change this) corner and holding it there for 2 seconds or so. You can prevent *Pyro!* from ever becoming active by moving the cursor to the lower right corner (of course, you can also specify which corner will activate this feature, too). *Pyro!* remains active until the mouse is moved or any key is depressed. Then you are right back where you were.

SETTING IT OFF

Pyro! is a 9.5K cdev resource. That means that if you're running *System* 4.1 (or higher) the *Pyro!* icon appears in the scrolling list at the left side of the *Control Panel*. Click once on the *Pyro!* icon and the *Pyro!* Control Panel appears. There are five operations you can perform here. The first thing you should do is click on the word *Pyro!* at the bottom.

Then adjust *Pyro!* to your tastes. The two miniscreens at the top let you select which corners of the real screen will activate *Pyro!*'s Sleep Now and Sleep Never features. If you select the same corner on each screen, Sleep Now will be disabled.

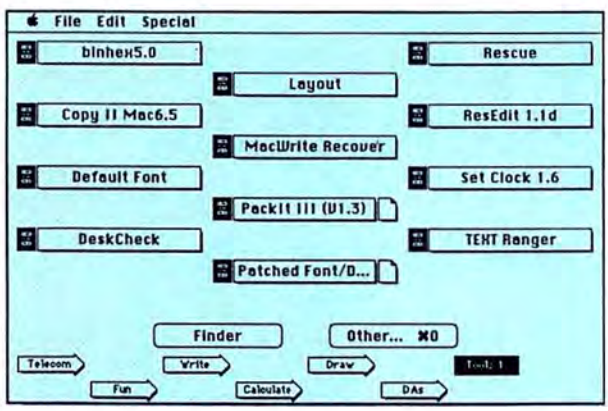
The next row of radio bottoms lets you set the amount of idle time before *Pyro!* takes over. The third row determines how *Pyro!* treats such background tasks as electronic mail reception, print spooling and alarm clocks. As a rule, you should leave these on, but be aware that some background tasks (such as print spooling) can take a lot of time and make the fireworks appear jerky. Finally there are buttons to turn *Pyro!* on or off. They're located in

PowerStation

PowerStation is meant to replace your *Finder*. It uses a system of pages and buttons to let you go immediately to any application or document. It's particularly useful for people who use many different applications and documents during a single work session. It's also very useful if you have lots of files that are organized in many folders and levels.

If you tend to use only one or two applications or if your files are essentially flat (that is, all on one or two levels), you won't gain as much as other users from this program.

There's an evaluation version of *PowerStation* on every *Suitcase* disk. And it's worth trying out. This $49.95 product is also available from Software Supply.



This is a typical *PowerStation* screen. Click on any box to go directly to that application or document. You no longer need to search through your folders for anything.

the bottom right section of the Control Panel.

All changes take effect as soon as they're made. That means you can easily try out all of *Pyro!*'s options. You don't have to restart the Mac to see their effect.

Pyro! is a bit picky. It only works with *System* 4.1 or higher. If you're still using *System* 3.1.X, 3.2 or 3.3 (no one should be using 3.0, which is very dangerous), you have a choice. You can upgrade to *System* 4.1, which is on the *Pyro!* disk, or you can use *PyroEdit*.

PyroEdit has two major functions. The first is to let you configure *Pyro!* You need to use a separate program to do this because *System*s earlier than 4.1 don't support the separate cdev icons. *PyroEdit* also notices if you have an older *System* and asks if you want *Pyro!* configured to work with it. Click on YES, and *Pyro!* is converted to work properly with your *System*. *PyroEdit* can also undo this conversion if you upgrade to a new (4.1 or higher) *System*.

I have only one complaint about *Pyro!* That's that it can be too entertaining and, indeed, mesmerizing. I often find myself watching it, waiting to see how big and where the next burst will be. I knew that I might have a problem the day I discovered I could tell how high any rocket was going to go by watching the size of the flame at the base of the screen when it took off.

STEVEN BOBKER IS EDITOR IN CHIEF OF AND STAFF TYRANT AT MACUSER.

MACUSER RATING

Suitcase ★★★★★

Follows Mac Interface	■■■■■
Printed Documentation	■■■■■
On-Screen Help	None
Performance	■■■■■
Support	■■■■■
Consumer Value	■■■■■

Comments: Simple, easy-to-use program that lets you use all of your fonts and DAs all the time. **Best Feature:** Utter and total transparency. **Worst Feature:** Manual is intimidating in places. **List Price:** $49.95. Published by Software Supply, 599 N. Mathilda Ave., #210, Sunnyvale, CA 94086. (408) 749-9311. Requires 512K+. Not copy protected.



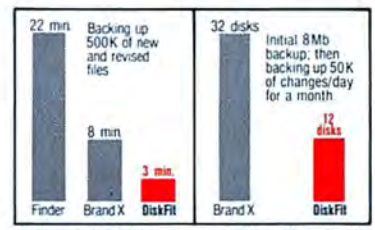
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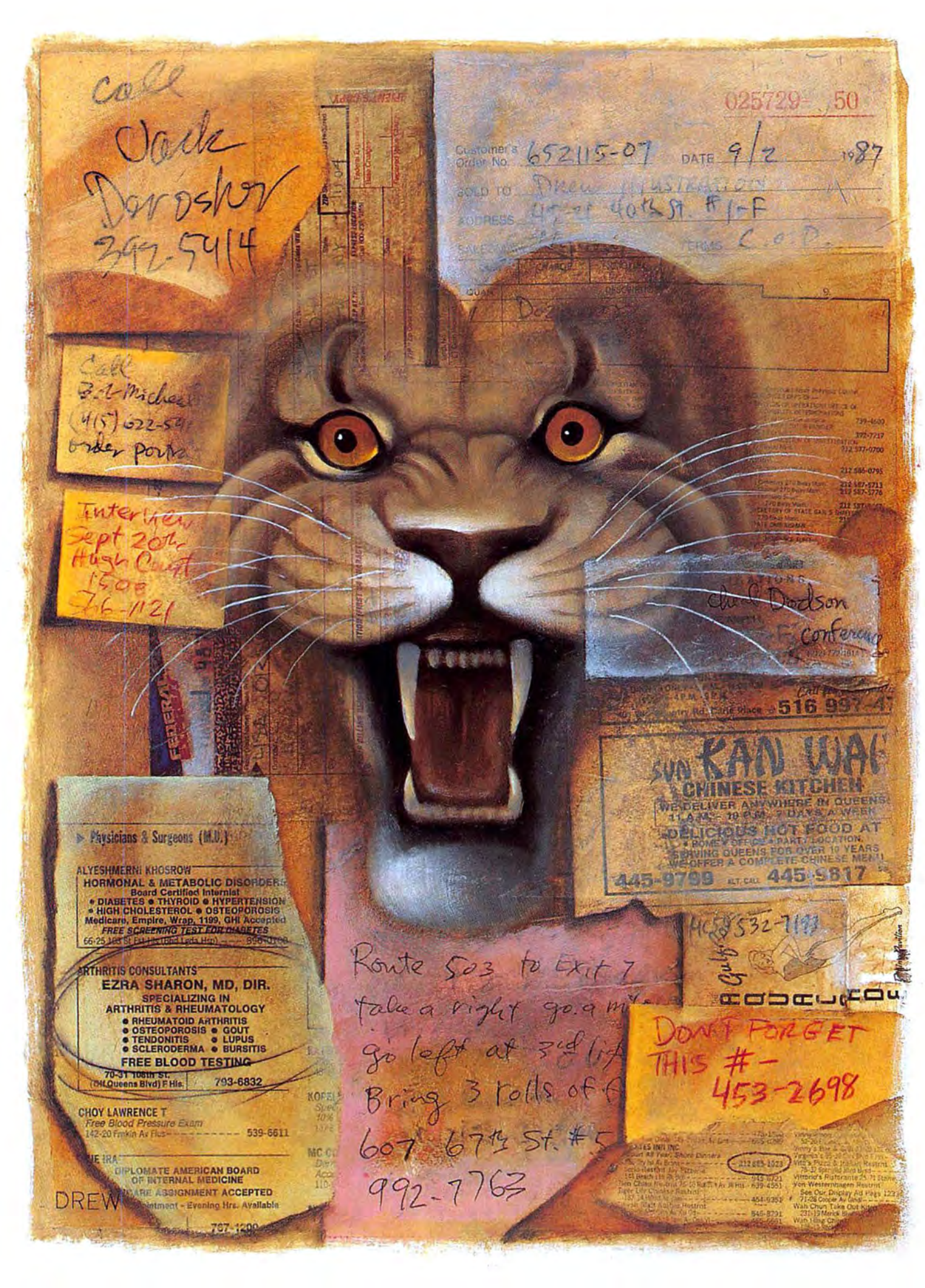
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A New Breed of C.A.T.

Like every cat you've ever known, it's nice to have around but it definitely has a mind of its own.

BY MICHAEL D. WESLEY

(A MINOR FICTION)

"Hey, have you seen a little piece of yellow paper with some notes scribbled on it?"

My partner looked up from her desk and winced. "A little piece of paper? Not again. Please tell me you didn't do it again." Silence. She buried her head in her hands and pulled hard at her hair. "*%#!&! What was on this one?"

I cringed sheepishly, something I do often in situations like this. "Um, well, it had a phone number and a name and some directions." I spoke into my shirt collar as I scoured my desktop for the twenty-third time.

"A name. The name of the person you're supposed to see today about that $10 million contract?" Her voice was dead flat, but leaped a little when she said the numbers.

"Um, yeah. And his phone number, and..."

"Directions telling you where to meet him and how to get there?" Starting to get a little shrill.

I scratched my head. "Yeah." Pause. "And the time." As usual, I didn't have any of the information written anyplace else. "I think his name was David Armstrong or Armatrading or something like that, and we were going to meet at some Chinese restaurant in San Mateo..." I sat down hard, not 3 feet away from my Macintosh.

My partner looked at me and looked at the Mac. She didn't say a word, but then she didn't have to. Her eyes conveyed the message that had been spoken thousands of times before: "How can you keep doing this? How can you continue to keep important information on little pieces of paper when you have that powerful machine there to organize it all for you?" She turned away and muttered a single, highly descriptive four-letter word under her breath, but not so far under that I didn't hear it.

I turned and looked at my Macintosh, which condemned me with its silence. Why hadn't I ever gotten around to setting up a data base? Why—when I knew that it would save me the countless hours of frustration I now spent searching endlessly for little pieces of paper?

The answer doesn't make much sense at moments of desperation like this, but seems perfectly reasonable at all other times: It's too much work. I needed a relational data base, one that would help me keep track of appointments, meetings, client and other business addresses and phone numbers, and that links all the information so I don't have to go back and forth, re-entering the same item 12 different places.

I know from experience that that could mean hundreds of hours of programming or designing—just to get all the elements in the right place and with the right links—or thousands of dollars in consulting fees to have someone do it for me. I never had the energy to sit down and learn the ins and outs of a relational data base. So here I sit, conjuring visions of my gravestone with no engraving on it, just little Post-It notes stuck here and there with my vital statistics and the epitaph—"Did anyone see a little piece of paper with the name of the engraver on it?"

A DEDICATED C.A.T.

Relational data bases offer tremendous power to users who have the time or money to spend creating usable applications. Most relational data bases make you use their own internal programming language to design a data base. Many of these languages are as complex as Pascal, C or other high level languages. And even if the programming structure is visual and fairly simple, it still takes a lot of time to learn the program and build a personal data structure.

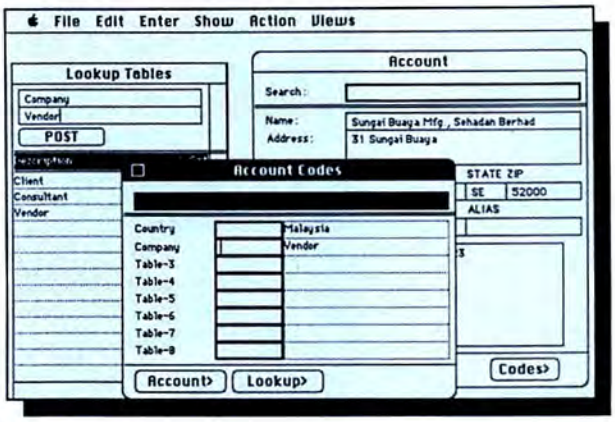
There are exceptions—predesigned relational data bases that perform a specific function. The most familiar example is accounting software. Accounting programs are relational data bases. All the files must be interrelated, and linked to a central ledger file.

C.A.T. from Chang Labs is a new breed of dedicated relational data base. It's specifically designed to help you manage contacts, activities and time (hence the name). Chang Labs has been in the relational data base business since the very early days of Macintosh with an accounting system called *Rags to Riches*. This latest offering builds on the structure used in *Rags to Riches* to create a personal management system. It may just be the cure for the dreaded "little pieces of paper" syndrome.

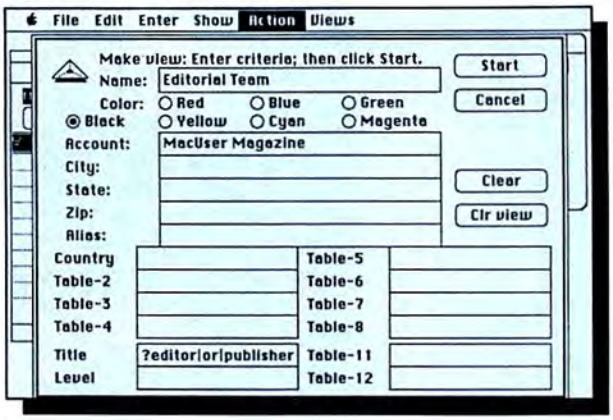
The family ties to *Rags to Riches* bring both advantages and disadvantages. On the plus side of the ledger, if you use *Rags to Riches* as your accounting software, you have already mastered much of the some-

KIM DREW

A New Breed of C. A. T.



The Account Record card, Account Codes and Lookup Table. Codes are used to record detailed information in up to eight separate categories. The categories are defined and expanded in the lookup tables.



This is the Make View window where you enter the criteria to perform a search. *C.A.T.* will find all matching contact names and create a view of those contacts. The color options let you see selected contacts highlighted in a color of your choice on a color monitor. In monochrome, the selected contacts are italicized.

what peculiar *C.A.T.* interface. A large portion of *C.A.T.*'s design (and, in fact, much of the code) is borrowed from *R to R*. To balance the ledger, *C.A.T.* has a downside common to computerized accounting programs: The structure is *quite* rigid and forces you to work in a very particular way.

TAMING THE C.A.T.

C.A.T. comes with a small set of data already in place and a tutorial in the manual that shows the most significant features. Do go through the tutorial. It's a good introduction and if you skip it, you'll probably have to go back to it later on, in frustration. It's better to do it at the beginning. Don't make the mistake of thinking you know how to use the program after you've worked through the tutorial. Chances are good you'll be fooling yourself.

C.A.T. is an unusual program in many respects. It's easy to use—once you figure it out—but it's extremely difficult to learn. The manual is necessary. One thing that will help is spending a lot of time with sample files. Use both the tutorial files on the disk and files you create as trials to test out all the different features. It's best to learn how they work before you enter your own data.

You may well ask, "If it's such a pain to learn, wouldn't it be better to design my own?" In many ways it probably would, but if you haven't done it yet, you probably never will. For this reason alone, *C.A.T.* can be a tremendous tool. It takes the design issue out of the way and lets you get right down to working with data.

A NEWBORN C.A.T.

After you've done the tutorial and feel confident to go it alone, trash the tutorial files and start organizing your information.

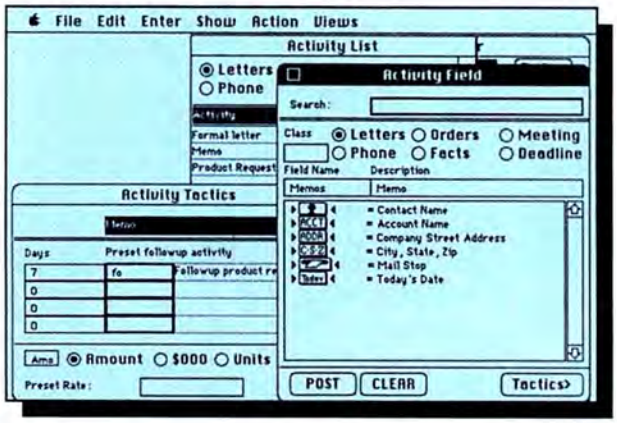
The offbeat quality of the *C.A.T.* interface is apparent almost immediately. If you don't have an existing set of *C.A.T.* data, you get a dialog box complaining about it and telling you that no *C.A.T.* files have been found. You're then faced with a standard Open dialog box, even though you've just been told there is nothing to open. To get to a new file, you have to select CANCEL, at which point the dialog politely goes away and you are presented with an Accounts List window, an Activities List and a Calendar.

The Accounts List and Activities List will be empty, while the calendar should display the current date, as inhaled from your Mac. The List windows are just lists. You can't enter data in them—they simply parrot back to you information that you enter in other places.

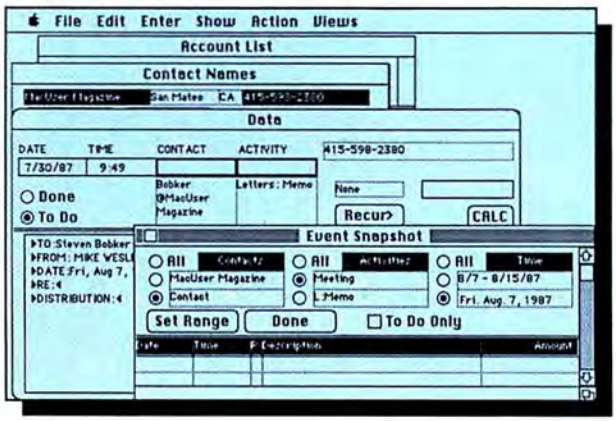
The Accounts List is the topmost window. Accounts are simply groups of contacts arranged in a way that makes sense to you. An account can be a company where you have a number of contacts for different purposes. It can be a division or department within a large company. Or you can have a collection of people at different companies but with a common thread, for example, all the vendors you deal with for a specific item.

Setting up accounts takes a considerable amount of thought. Because *C.A.T.* lets you create temporary groups of contacts called Views, there is often no need to separate out a department or division in the basic Accounts list. Whether you do or not depends on the number of accounts you have, and the number of people in each account. This is an entirely personal matter, based on the way you work, so even general guidelines don't make much sense. As you work with *C.A.T.*, you'll begin to get a feeling for what works best for you.

Before you start entering your accounts, it's helpful to set up lookup tables. You can have up to eight lookup tables for accounts, numbered one through eight. Although the first table is already given the default value, "Country," useful if your accounts are multinational, it can be changed to whatever you like. The lookup tables speed up the entry of repetitive detail information for each account. While it's not necessary to use all—or in fact any—of the



Activities are defined in the Activity Field window. Here you can preset text for memos and letters, by encapsulating repeating information in the >< brackets. The keys shown here are embedded codes that tell *C.A.T.* to find the specified information from data currently active and drop it into the memo.



The Event Snapshot is a list of all activities for a specified time range. Events are entered in the Data window and linked to a contact and account.

lookup tables, the detailed information can be quite useful and the tables give you more flexibility when performing searches.

To create a lookup table, select LOOKUP TABLE from the Enter menu. You get a dialog box that says Select Lookup Table, and small boxes numbered 1 through 12 (tables 9 through 12 are attached to Contacts). Once you are well into the program, you can select a particular lookup table by name from the Account or Contact windows. When you select a table, a long skinny window appears, with two data entry lines at the top and a two-column list below.

Let's say that some of your accounts are companies, while other accounts are professional organizations, and each of these categories has logical divisions. Enter Company in the first data line. Press Tab or Return to move the cursor to the second data line where you begin entering descriptions for the different types of companies you work with: Vendor, Client, Consultant, etc.

One-word descriptions are easy to enter, easy to remember and useful when you want to perform a search through accounts later on. Press the Post button after each entry to record it. Note, however, that the Post command in *C.A.T.* posts data to the file in RAM, but doesn't send it to the disk. You must save periodically to make sure everything you enter gets saved to disk.

As you post each name, it appears in the list portion of the window in alphabetical order. If you want to change a name already entered, select it in the list then type a new name in the second data entry line at the top. You can't edit lists directly in *C.A.T.*

You can come back to the lookup table at any time, to add new categories or make changes in existing ones. It's almost impossible, however, to delete a name in the lookup table or elsewhere. You can blank it by erasing the name and posting, but if you do that, you get a blank line at the top of your list. The only way you can really delete an item is to give it another name.

ENTERING ACCOUNTS

The Account cards are very simple, with space for name, address and so on, and a small text window for notes. Press the CODES> button to bring up an Account Codes card where you enter the values associated with the lookup tables created earlier. This card lists the eight tables assigned to Accounts, by number or by name. Next to the name or number of each table is a short heavy black box followed by a longer, dotted-line box.

The dark-bordered box is something Chang Labs calls a clairvoyant field. It provides a search function on the values stored in each table. Let's continue with the Company example mentioned above. If you create an account card for a Vendor company (and you have already filled out the lookup table with Vendor as one of the options) you can just type V in the clairvoyant field next to Company. *C.A.T.* searches the lookup table for matching names, finds Vendor and displays it in the dotted line box (called an Echo field) to the right.

When you are finished filling in all the appropriate codes for an account, click on the Account window to activate it and press POST. This sends the account into memory and brings up a blank card.

MAKING CONTACT

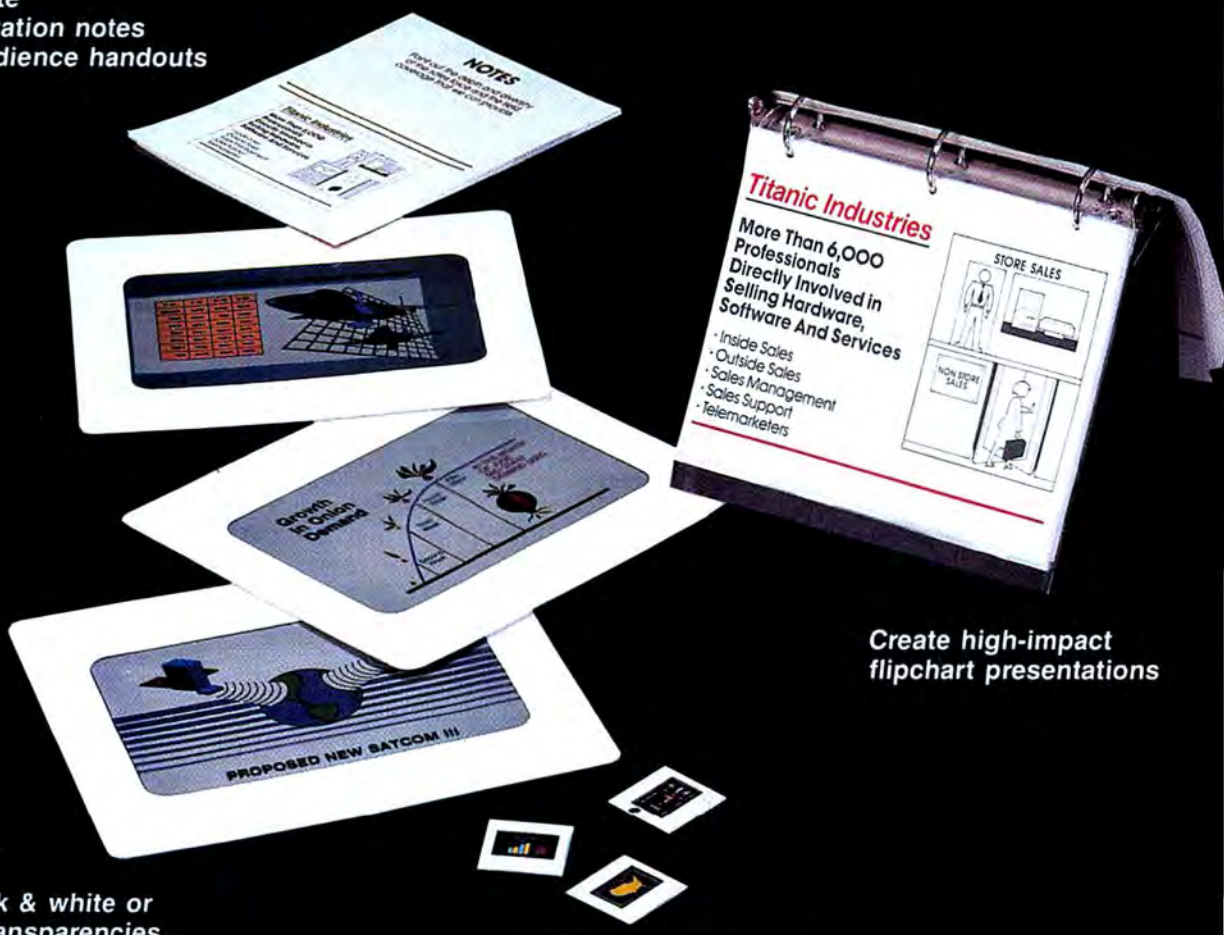
Once you have set up the accounts, the next step is to start recording information for the contacts you have within each account. There are two ways to get a blank contact record card. The first is to select CONTACT RECORD from the Enter menu or press the command key equivalent, COMMAND-3. The second way is to double-click on the name of the appropriate account in the Accounts List window.

The Contact Record card is similar to the Account Record, but instead of having space for an address it has a small field for Mail Stop (since the contact is associated with a company and the company's address

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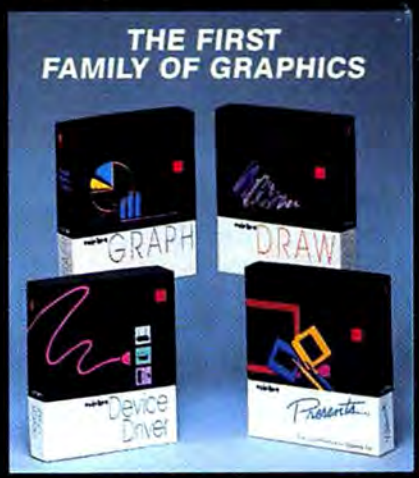
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A New Breed of C. A. T.

is already filed away in the Accounts Record). And the clairvoyant fields for lookup tables 9 through 12 are on the card itself. As before, type one or two letters in the clairvoyant field and *C.A.T.* enters the matching value from the Account Record or the selected lookup table.

A VIEW TO A KILL

As mentioned above, *C.A.T.* also lets you create temporary groupings of contacts called Views. Views are useful for separating out a small group of contacts within an account, or for merging related groupings from several accounts into a single collection. Selecting MAKE VIEW from the Action menu brings up a large and complicated looking dialog box. It's *not* complicated, though. It's actually a very quick, easy and powerful search dialog.

To create a View, just enter the value you want to search for in the appropriate box or boxes. In the example shown here I want the Editorial Team at *MacUser* as my view, perhaps to send invitations to a product announcement. I enter *MacUser* as the account. Then in Lookup Table 9 (assigned a default value of "Title") I enter the following string—?editor/or/publisher—to find all contacts whose titles include the word editor or publisher. The "?" is used to indicate "includes," as opposed to "starts with" or similar options. (A full list of all the modifiers is located in the reference portion of the *C.A.T.* manual that describes the Action menu.) When you are finished entering the search criteria, press the START button. You'll see a dialog box asking you to confirm the action. The contacts contained in the new view appear on the Accounts List window(s) in italics.

One of the advantages that Views offer is a Mail Merge capability. You can write a simple memo, embed codes that merge the contact names from the current View, today's date and so on and print out personalized copies of the memo to everyone in the current View. This is a very powerful tool, but read the manual and follow the steps *very carefully* because it takes a while to figure out how to do it properly.

TIME TO ACT

If all *C.A.T.* did was to help you gain control over your contacts data base, it would be worth the investment in time and effort. But *C.A.T.* does more, by linking contacts with activities and time. It does so through the use of Activity records and Event Snapshots.

Activities include meetings and appointments, letters that have to go out, phone calls that have to be made, memos, etc. You design the activities in up to six classes (preset for Letters, Phone, Fact, Order, Meeting and General, but you can change them) in a way that makes sense to the way you work.

Activities are entered by selecting Activity Field in the Enter menu, or double-clicking in a field on the Activities list window. (Even if the interface is a little unusual at times, it is consistent. Similar actions perform similar functions throughout the various parts of the program.) There is a place for both a short field name and a longer description on the Activity Field Record. Somewhat confusingly, *C.A.T.* takes the *description* as the value to search by, so use a brief, easy to remember phrase here.

In the Activity Field window, you can create Preset Text for memos or standard letters. It is here that you embed codes using command keys so the program can fill in specific data for the contact or contacts you have active at the time.

Activities are categories of things you do on a regular basis. For instance, you may have an activity under the class Phone, called Followup Call. You define Followup Call to mean a phone call to a customer a set number of days following a sale to see how things are going.

Events are records of specific actions at specific times. For instance, a customer, Mr. Jones, makes a purchase on September 1st. On that date, you enter a new event, assigning Followup Call as the activity. Date the event 7 days from now. On the 8th of September, when you check your Event Snapshot for a list of events scheduled that day, you'll see Followup Call to Mr. Jones on your list.

C.A.T. O' NINE TALES

C.A.T. is actually very well named. Like a feline, the program keeps some of its best features hidden away until you get to know it intimately. There is a wealth of report options, for printing out the data you now so diligently record. You can link tactics with an event so routine events are automatically scheduled in advance. I haven't even mentioned the calendar, which has some interesting features all its own.

The structure of *C.A.T.* is rigid, perhaps too rigid for some, but within the structure there is considerable flexibility so you can customize the program for your use. And because it is at heart a relational data base, the linking of contacts to events to time can be extremely powerful. As long as you know going into it that *C.A.T.* takes considerable learning time, you might find it the *purr-fect* application to rid you of the Post-It notes on your forehead, the tags pinned to the inside of your jacket, the pile of little bits of paper next to the phone.

MICHAEL WESLEY IS A CONSULTANT AND CONTRIBUTING EDITOR TO *MACUSER*. HE IS ALSO THE FOUNDER OF THE WIZARD'S WORKSHOP, A MAC-BASED PRIVATE SCHOOL FOR GIFTED KIDS IN SONOMA, CA.

MACUSER RATING

C.A.T. ★★★½

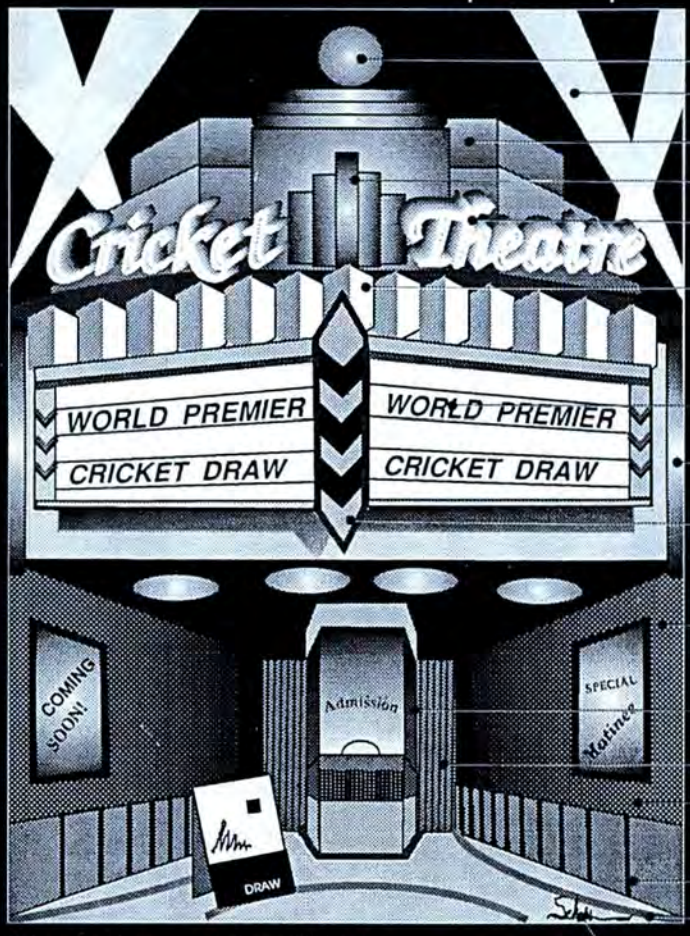
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Support	■ ■ ■ ■ ■
Consumer Value	■ ■ ■ ■ ■

Comments: A dedicated relational data base for managing contacts, activities and time. Once you learn how to use it, *C.A.T.* is great for keeping track of people and events that you never bothered to put in a data base before. **Best Features:** Ease of use, well thought-out links between types of data. **Worst Features:** Rigid structure makes it tough to learn, may not fit the way you normally track information. Interface is offbeat enough to be a distraction. Peculiar screen drawing sometimes leaves odd bits of windows hanging around. **List Price:** $299.95. Chang Laboratories, Inc., 5300 Stevens Creek Blvd., San Jose, CA 95129. (408) 246-8020. Requires 512K+. SE and Mac II compatible. Not copy protected.

cricket DRAW

FIRST IN SPECIAL EFFECTS

New! Version 1.1 Features Improved Speed



Printed with an Apple LaserWriter™

Every place you look you'll see rave reviews. Why? Because Cricket Draw has created a ***new*** *state-of-the-art in Macintosh drawing technology.*

Spectacular Special Effects

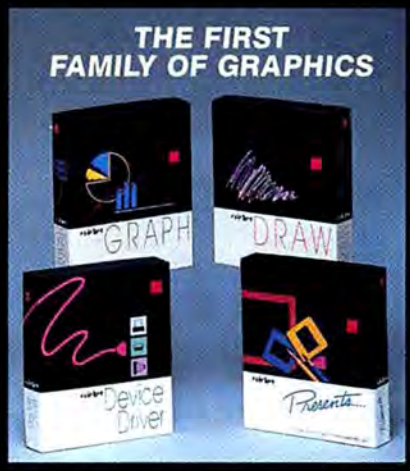
Cricket Draw's most universally acclaimed capability is its special effects generation. A quick glance at the example at left will give you a feeling for what can be accomplished with a little imagination and Cricket Draw. Graded Tones (fountains), Shading, Text on any path — all these effects and more are simple with Cricket Draw.

For Creators. . .

If you use your Macintosh to create graphics, then you certainly want the industry's most comprehensive set of drawing tools. You want the industry's most advanced text manipulation tools. And you want the ability to take full advantage of PostScript equipped devices. With the Power of Cricket Draw, you can finally unleash your true creative potential.

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Graphic Arts? Desktop Publishing? Cricket Draw allows you to create prescreened, camera-ready art, complete with typeset copy.



When it comes to Macintosh graphics software, there's just one name to remember — Cricket Software. Your local dealer will be happy to introduce you to the entire family: Cricket Graph, Cricket Draw, Cricket Presents. . . , and Cricket Device Drivers.

cricket software

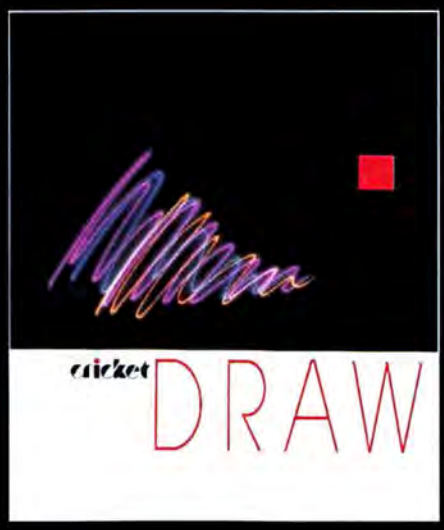
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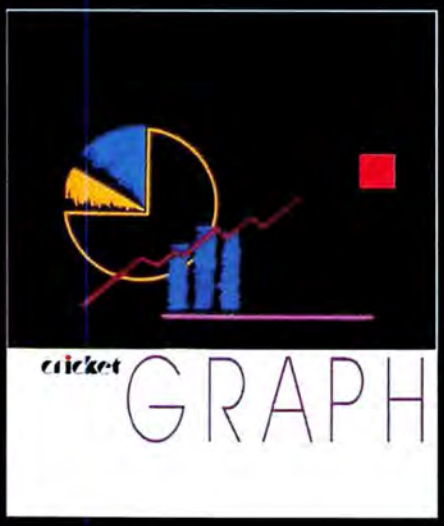
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THE FIRST FAMILY





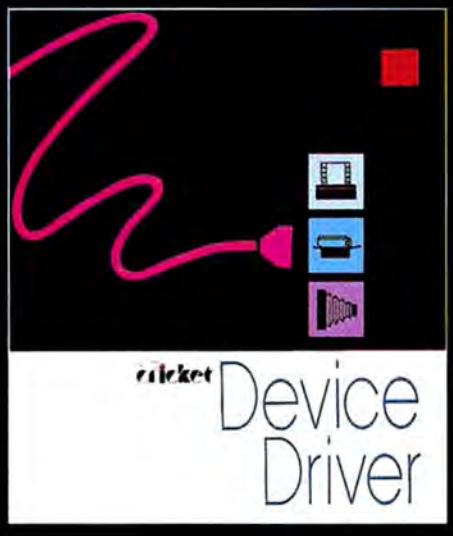


OF GRAPHICS

In 1986 Cricket Software quietly introduced its first product — Cricket Graph. A business/science graphing package so rich in features yet so easy to use, it became an instant success.

1987 brought the release of Cricket's second major product — Cricket Draw, the industry's first drawing program that produced output by generating PostScript code. Hailed as "revolutionary," Cricket Draw helped Cricket establish a reputation for technological leadership.

Today it's more than a reputation, it's a legacy. With the introduction of Cricket Presents. . ., the first ***professional*** *presentation graphics tool and Cricket Device Drivers, support for a variety of non-PostScript devices; Cricket Software has established itself as THE First Family of Graphics.*



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If you use your Macintosh for graphics applications, we'd like you to meet the full family of Cricket products.

Cricket Graph — First In Business/Science Graphing

The first full-featured graphing program for the Macintosh is also the best. Named 1986 "Best New Business Graphics Program" by MacUser Magazine, and "Best Business Graphics Program" by MacWorld. Cricket Graph is the standard by which all other graphing products are measured.

Cricket Draw — First In Special Effects

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Cricket Presents. . . Professional Presentation Graphics

Introducing Cricket Presents. . ., the first professional presentation graphics tool. Cricket Presents. . . provides a full range of tools to create professional quality, full color presentations. It supports a wide variety of output devices including printers, laser printers, and film recorders. It also provides files which are compatible with major slide production services like Magicorp and Compufilm.

Cricket Device Drivers — Freedom of Choice

Now you can produce high quality output from any Cricket Software on a variety of non-PostScript devices with Cricket Device Drivers. Cricket Device Drivers support the most popular devices including the HP PaintJet, and XEROX 4020 color printers, HP LaserJet, and the Matrix SlideWriter. Plus there are special Drivers for the Autographix slide service. Ultimately, there will be Cricket Device Drivers for every device worth driving. Cricket Device Drivers include the driver, an appropriate cable for the device, and type fonts compatible with the standard LaserWriter font families.

First in Innovation

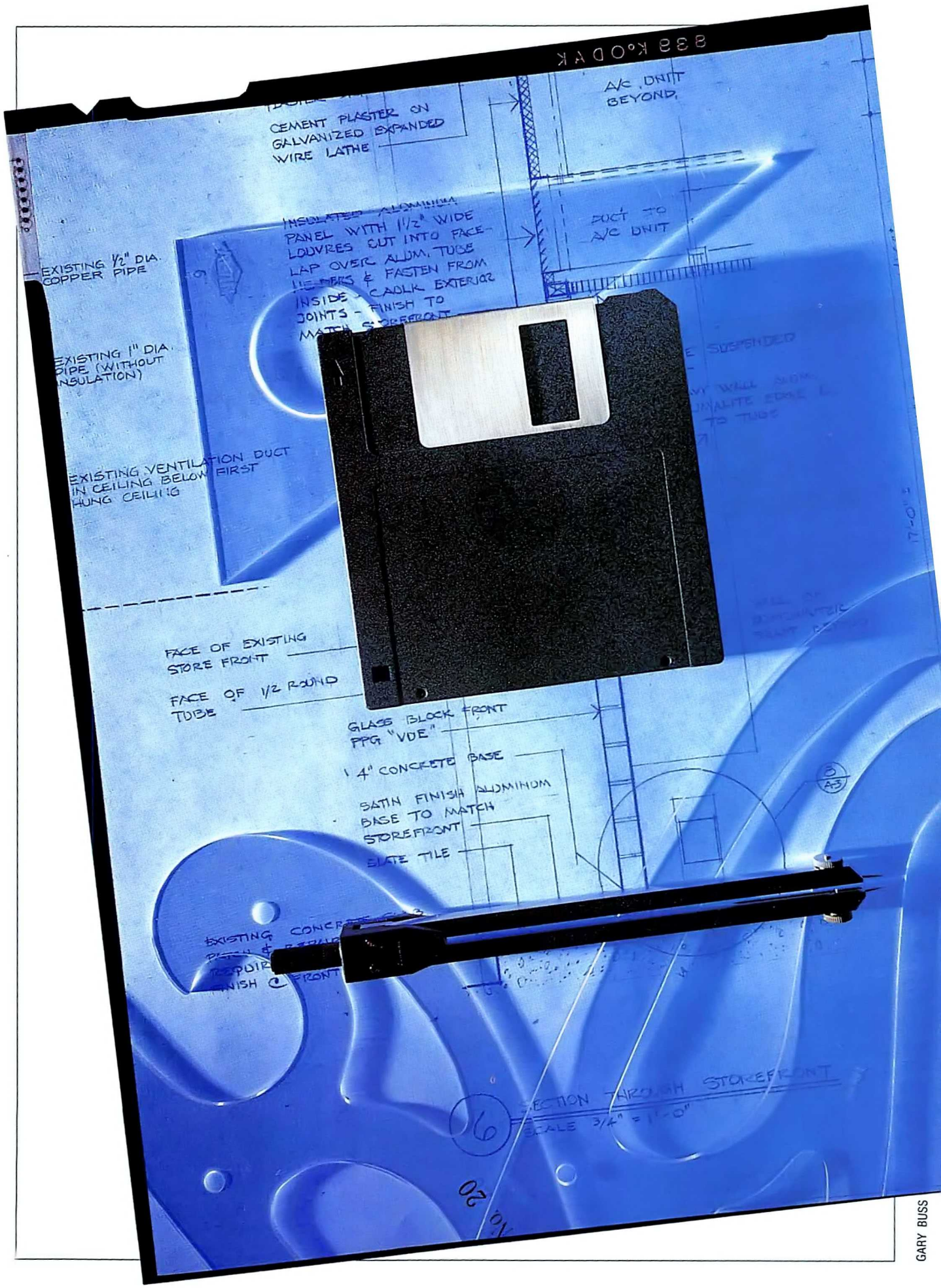
If there's one feature common to the entire family of Cricket Products it's innovation. Why not put that innovation to work for your graphics application? Your local dealer will be happy to introduce you to the full line of Cricket Software — The First Family Of Graphics.

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FACE OF 1/2 ROUND TUBE
GLASS BLOCK FRONT PPG "VDE"
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SATIN FINISH ALUMINUM BASE TO MATCH STOREFRONT
SLATE TILE
SECTION THROUGH STOREFRONT
SCALE 3/4" = 1'-0"

GARY BUSS

On the Right Track

Professional level CAD/CAM for the Macintosh—and the price is right.

BY JOSEPH GRECO

ANY ENGINEERING OR ARCHITECTural firm choosing a micro-based computer-aided design (CAD) system is faced with an important decision. Do they go with a proven IBM/AutoCAD setup or should they "take a chance" with a Macintosh-based system? Not long ago, the lack of sophisticated CAD software on the Mac made this an easy choice. However, even though a lot of people may not want to admit it, there now exists serious CAD software for the Mac. *The MicroGraphic Manufacturing Station (MGMS)* from Micro CAD/CAM is one of the leaders.

MGMS (version 2.09) is a fast and full-featured CAD program for producing mechanical and architectural drawings. The program originated in Israel and first ran on the Apple Lisa. In 1986, it was redesigned to run on the Macintosh and by June the first Mac versions began to appear. Many new features have been added since its premiere. Version 3.0 is just around the corner, and it promises to turn even more heads (see sidebar).

MGMS adheres to the Macintosh interface, though not as well as some other Macintosh CAD programs such as *MacDraft* or *MiniCAD*. This does not mean that the program is hard to learn, however. Although *MGMS* sometimes inhibits a user's work, most CAD professionals will be pleased with the drawing quality this program produces.

The program offers a full range of drawing features for professional CAD work. (It supports color for those with a Mac II and RGB monitor.) In most cases, your ability to create geometry is only limited by your imagination.

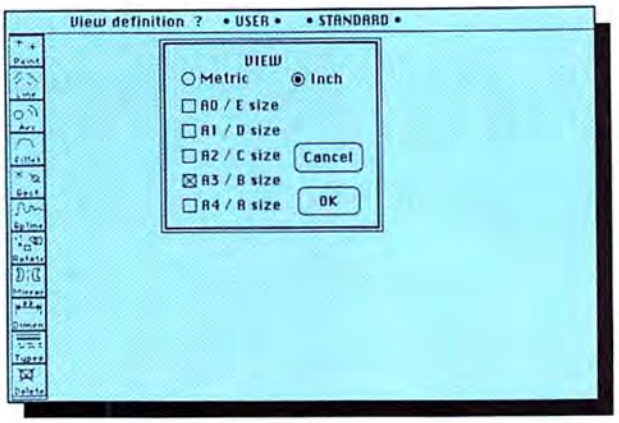
PULLING INTO THE STATION

When you open *MGMS* you are greeted with "View Definition?"—a choice of user-defined or standard engineering A through E sized sheets. Drawings can be done in either inches or using the metric system.

The first thing you notice about *MGMS* is that it has that Macintosh look—due to the icons and menus. But click on the icons located on the left side of the screen, and the differences between *MGMS* and other Macintosh CAD programs immediately become noticeable. In *MGMS*, each icon has its own menu offering you a series of options. For example, under the top icon titled "Point" a menu appears with ten different ways to place a particular point. Included are the placement of points using absolute, incremental and polar coordinates. You can also place a point at any specified distance on a line or at its midpoint.

After placing a few points you

On the Right Track: MGMStation



The View dialog allows you to select sheet sizes using either metric or inch dimensions.

Even though a lot of people may not want to admit it, there now exists serious CAD software for the Mac.

If all this grouping and ungrouping sounds confusing, it really isn't—it is, however, very tedious.

should notice a unique feature of the software, the mouse escape. Although difficult to get used to at first, the mouse escape proves to be a great asset in speeding up the drawing process. It allows you to leave your present drawing mode just by bringing the mouse over to the icons. This works best when you make a mistake in the middle of a drawing mode. In many CAD programs, if you make one error while entering a series of data relating to a command, you'll have to carry out the rest of the command. With *MGMS*, you can rely on the mouse escape to start over at any point.

FURTHER UP THE LINE

Underneath the icons, you'll find a buried treasure of geometric creation. The Below the Point icon is for line placement. Lines are easy to create and, again the number of line placement options is impressive. Two of the most helpful line tools are the Perpendicular and Parallel lines. With Perpendicular Line you can select a line and scribe a perpendicular line off of it. Parallel lines can be created by selecting an existing line and either typing in an offset distance or selecting an existing point with the mouse.

One drawback in creating both perpendicular and parallel lines with the mouse is that they must be snapped to an existing point in order to work. For example, you can't just select a line and click anywhere on the "sheet" (a free point) and have the line copied parallel to that point. To accomplish this you have to select FREE POINT under the Point icon and place that point where you want it. Then copy the line parallel to that free point. This is not a very intuitive way of drawing and I feel it's a basic flaw of the software.

Circles, arcs and fillets are frequently used in creating any type of engineering or architectural drawing, and are a good test for determining the power of a CAD system. *MGMS* allows a great deal of creativity in drawing these elements by offering various ways of creating them.

LAYING THE TRACK

Once you've placed some basic geometry, you may want to edit it. *MGMS* features all the necessary modification tools (move, copy, rotate, delete, etc.); however, this is where another flaw of the software appears. Any piece of on-screen geometry you want to edit must first be made into a group. For example, if you need to move an object it must be grouped first and then moved. If it is already part of a group, you cannot group it separately—you must smash (ungroup) the entire group and then group the line, then, finally, move it. If you want to group this line to the previous group, it has to be ungrouped and then regrouped. If this sounds confusing, it really isn't—it is, however, very tedious.

All this grouping and ungrouping definitely slows down what is usually a smooth drawing process. Groups also have to be used to simulate layers because *MGMS* has no definite layering system like those in *MiniCad* or *SNAP!* This only leads to more problems as drawings become more complex. Instead of having a drawing on what might be 10 or 20 layers, which can be easily turned on or off (made visible or invisible), you have to use groups to act as layers. These groups cannot be turned on or off or edited as easily as CAD programs with traditional layering systems. Avi Lipski, president of Micro CAD/CAM, told me that a different layering system is being worked on for future versions of *MGMS*.

Creating shapes such as rectangles and hexagons is easy to do in *MGMS*. Once the geometry is created, *MGMS* has several ways to enhance it. A good example is hatching, which allows you to define the pattern, angle and spacing of the hatch. You can also access a separate module of the program called *MGMS GEOMetry* which calculates the perimeter, area, center of gravity and moment of inertia of a particular shape.

Once all the geometry is placed, there are many ways to change its appearance. You can change the line thickness of any element or change its style from solid line to a center or dashed line. Lines and shapes can also be trimmed and chamfered to

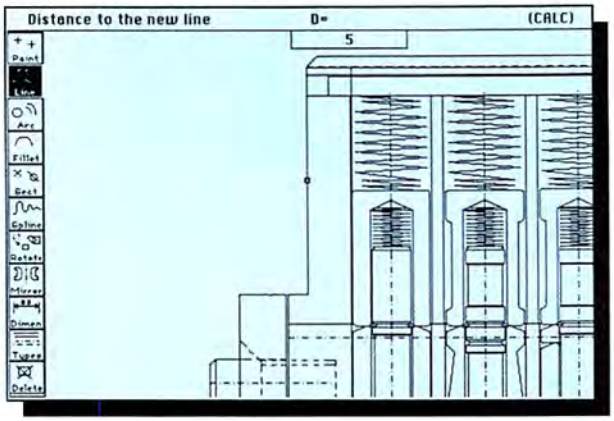


The best is yet to come.

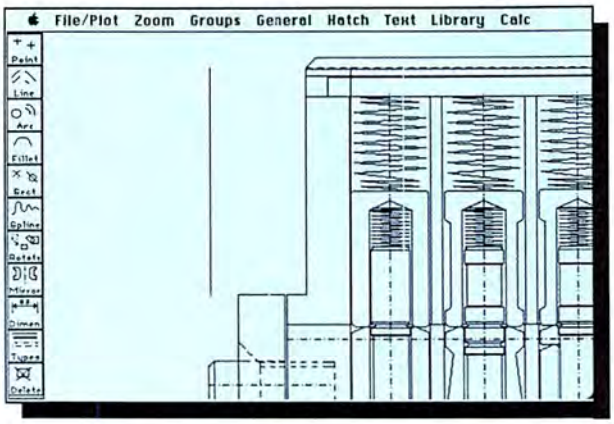
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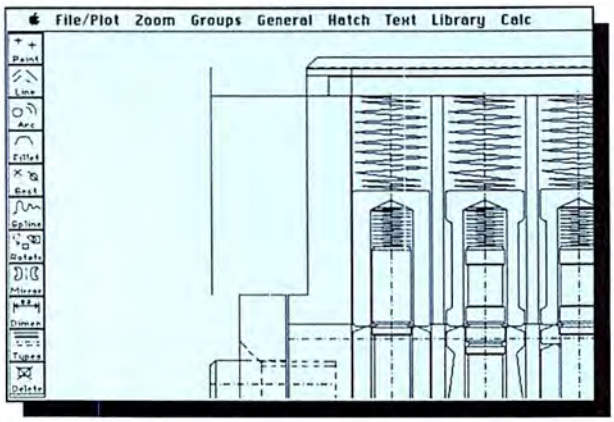
On the Right Track: MGMStation



To draw a parallel line, select the Line icon and calculate the distance between the parallel lines. The side of the line you click on determines the direction.



After entering the distance and hitting Return, the line is offset parallel to the previous line.



After drawing the parallel line, a perpendicular line, if desired, can then be created.

MGMS has many unique features, one of which is the style of panning it employs. MGMS redraws produce very satisfying results—due not only to the speed of the redraw, but also to the number of redraw options.

exact specifications. One of the most useful features is the Offset command. Any element, including arcs and circles, can be offset to any specified distance from the original element.

SWITCHING TRACKS

MGMS supports the standard Macintosh Clipboard, which means that you can copy and paste a drawing into other Macintosh programs or other *MGMS* files. When copying to the Clipboard you have the option of taking the complete drawing or just the basic geometry with or without the text, dimensions or hatching. This is a very versatile and clever feature. When working in a *MGMS* file it's possible to call up a previously saved drawing and use it in your present work.

One of the top priorities at Micro CAD/CAM is to develop a DXF file transfer with *AutoCAD* and its 300+ modules. Currently, *MGMS* supports the latest standard of IGES (using a utility program called *MG-IGES*) and this can be used to transfer *AutoCAD* drawings into *MGMStation*. Unlike its previous versions, this latest version of *MG-IGES* supports the transfer of dimensions.

First the good news—any element on your current drawing can be made into a symbol. Now the bad news—it must first be made into a group. As already mentioned, this leads to extra steps and only makes the drawing process longer. Once you get over the fact that you must deal with groups, you begin to realize how powerful the symbol creation mode of *MGMS* is. Users can graphically preview symbols, so it's nearly impossible to place the wrong symbol. You can also rotate or scale the symbol before you place it.

Compu-Arch, a California-based company, has enhanced *MGMS* for both architects and engineers by providing various packages of symbol libraries. Included are architectural symbols such as doors, furniture, bathroom facilities and staircases. These symbols are excellent for providing the finishing touches to architectural drawings. Recently added to the line are symbols for the drafting of schematic capture design (for use in designing printed circuit boards)

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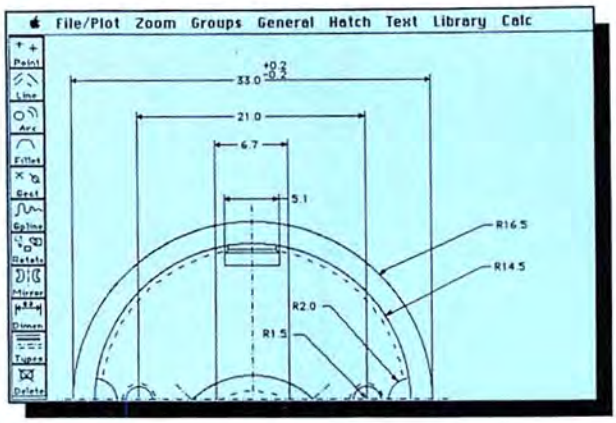
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On the Right Track: MGMStation



MGMS **allows for sophisticated dimensioning features. Note that the top dimension has a tolerance on it.**

and illustration. The company also plans to release a new interior design symbol library sometime this fall. This will include standard interior design patterns and room layouts.

KEEPING ON TRACK

Dimensions. How could we build anything without dimensions? They are so important in the creation of working drawings that we often take them for granted. So do programmers—who casually develop CAD programs with non-standard dimensioning ability. This is not the case with *MGMStation*. Here dimensions are created intuitively, quickly and technically correct. Although dimensions only follow engineering standards on screen, there is a plotting option called Plotter Install which allows you to change the dimension standard from mechanical to architectural. It also permits you to globally change the dimension accuracy (up to four digits), the dimension mode (inches or metric) and even the type of arrowhead (you can choose triangular, wedge, slash, circle or none at all).

TYPE OF TEXT

After placing your basic geometry and creating the necessary symbols and dimensions, usually the last step in finishing off a drawing is to place the text. The developers of *MGMStation* realized the importance of the text on a drawing, so they designed the program with its own window for placing text. There are only two options under the Text menu—Edit Text and Repaint Text. When you click on EDIT TEXT, a new window opens up with five more menus and six side icons. The icons allow you to place text in various ways—surrounded by a border, in a table or in a balloon, just to name a few. Since the Scrapbook is supported, you can paste text in from a word processing program.

It is easy to move or redefine the shape of the rectangle it is in even after the text is placed. One problem I have with text is that you have to define its height as a percentage of the drawing height. Engineers and architects usually think of text as being ⅛ or ¼ of an inch high, not 2.5 percent of the drawing height.

MGMS allows two text fonts—Monaco or Symbolic—which are suitable for most drawings. [*Editor's Note: Symbolic is a sans-serif font built into the program. It should not be confused with the Symbol font.*] You have the option of four different styles of text: plain, bold, italic and underline, which is more than sufficient for working drawings.

SCENIC ROUTE

MGMS has many unique features, one of which is the style of panning it employs. It works in a fashion which allows you to see the entire drawing as an inset on the upper left

Looking Ahead: MGMS 3.0

MGMStation version 3.0 is proof that the developers of the program are constantly working and listening to the needs of their users. Version 3.0 initially appears to be no different than version 2.09. However, a few clicks here and there immediately prove this first impression incorrect.

One new add-on is a second series of icons which can be obtained by clicking on any one of the two arrows above the top icon. This "second series" of icons is strictly geared toward geometric input. It includes rectangles, rounded rectangles, polygons and several other basic geometric elements.

You can double-click on certain icons and then define where the origin point of that element will be. For example, double-clicking on the rectangle icon will give you a choice of placing its origin point at any of the four corners or at the center.

The double line feature, ideal for drawing walls, is an addition that will be welcomed by architects. At press time, however, this feature was not yet fully operational.

One capability that users will have for the first time is the ability to cut, copy and paste elements. What this means is that you no longer have to group an element in order to move it. You can now paste elements to an existing grid or a free point. This idea of using the Clipboard for copying, cutting and moving elements makes *MGMS*' drawing process a lot smoother. However, an element which is part of a group still must be ungrouped in order to be cut or copied. Right now the standard command keys for copy, cut and paste are not implemented.

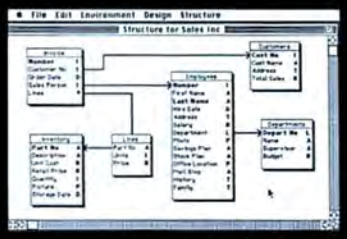
The grouping feature still exists, and here, too, improvements have been made. Groups can now be listed by name as well as by icon. This helps the user who has many groups and does not want to take the time to scroll through a few hundred icons—it is much faster scrolling through a list of names. Groups can also be concatenated— two or more groups can be combined to form one group.

There are also two new additions under the Zoom menu. The first, called Real Absolute Scale, lets you set the scale you draw in. For example, if you wanted to draw at a 1:10 scale, just set the real absolute scale to ".1". Another handy addition is the inclusion of a previous zoom setting, which allows you to return to your previous view. This is most helpful when you have just zoomed or panned into the wrong area and want to start over.

Looking past *MGMS* 3.0 there are many other features which Micro CAD/CAM is working on. One priority is a definite layering system, making it easier to view and edit separate layers. Enhancements such as this promise to make *MGMStation* an even more powerful and flexible CAD program.

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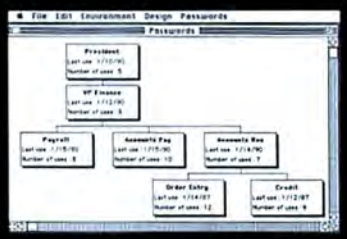
Structure containing files, fields and links



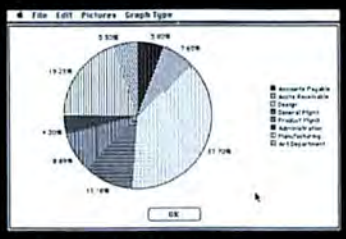
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Links	*Unlimited*
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Layouts	*Up to 32,000*
Passwords	*32,000 levels*

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Import/Export Data	*SYLK, DIF, and text with serial port and file communication control*
Search/Sort	*Multiple conditions, ad hoc queries, wildcard, and programmable searches*
Quick Reports	*Instant report generation*
Business Graphics	*8 kinds of graphs (pie, bar, column, etc. plus custom pictures)*
Programming	*Over 200 built-in commands and operators*
External Routines	*Add external routines written in Pascal, C, and other languages*
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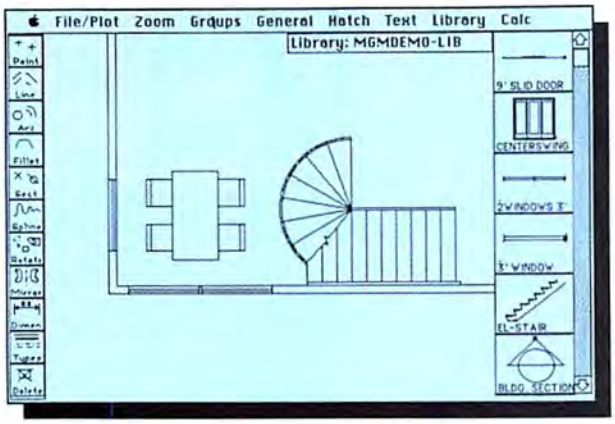
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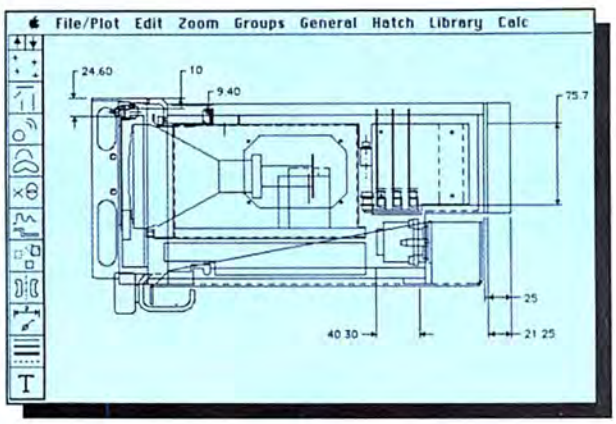
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On the Right Track: MGMStation



ADS-MGMStation-Architecture **is a symbol library which aids architects in creating plans and elevation drawings.**



The icons are slightly different in *MGMS* 3.0, offering the user more advanced features. This drawing was done in version 2.09 and altered in version 3.0.

side of the screen. Within the inset is a smaller box, representing your current view. By using the scroll bars you can move the smaller box and easily determine where your next view will be located.

The zooming features of *MGMS* are also very convenient. You can either zoom in or out by defining a certain scale factor, or you can zoom in by defining an area which then becomes your new view. You can also return to the original view, and a new feature in version 3.0 allows you to return to the previous view.

When looking at CAD software, one aspect that will usually grab your attention is the speed at which the program redraws images on the screen. *MGMS* redraws produce very satisfying results. This is due not only to the speed of the redraw, but also to the number of redraw options. The redrawing of certain time-consuming elements such as dimensions, text and hatching can be avoided by selecting REPAINT DRAWING. You can then individually repaint the dimensions, text and hatching. To view the complete work, just select REPAINT ALL.

DOCUMENTATION

The claim that a true Macintosh program means "you don't need to open the manual," will be disproven as Mac programs become more complex. However, it should still be possible to operate 70 to 80 percent of a program without having to resort to the manual. This is indeed the case with *MGMS*. Program operation is intuitive for the most part, and when the manual is needed, it's a reliable source. It features step-by-step instructions for every command, plenty of illustrations, an index and a tutorial.

END OF THE LINE

MGMS is in some ways a unique CAD application—performing many typical CAD operations atypically. Some operations—such as pan—work fine, while others—namely groups—make the program more rigid and actually disrupt the usual smooth flow of work. Despite these faults, *MGMS'* powerful geometry creation makes it ideal for many applications.

Program operation is intuitive for the most part, and when the manual is needed, it's a reliable source.

With CAD software for microcomputers usually falling in the $3,000 price range, *MGMS'* $799 price tag is a bargain. But this should not be considered bargain basement software. Many professionals have the mistaken idea that the highest priced software is always the best. This is one of the reasons why the lower-cost Macintosh CAD software has been overlooked in A/E platforms. However, these professionals are now giving Macintosh-based solutions serious consideration—regardless of industry dogma. And *MGMStation* is a powerful program deserving positive recognition.

JOSEPH GRECO IS SENIOR CAD/CAM EDITOR OF *CAD/CAM JOURNAL FOR THE MACINTOSH PROFESSIONAL* AS WELL AS AN ARCHITECT.

MACUSER RATING

MGMS ★★★★

Follows Mac Interface	■ ■ ■ ◪ □
Printed Documentation	■ ■ ■ ■ □
On-Screen Help	None
Performance	■ ■ ■ ■ □
Support	■ ■ ■ ◪ □
Consumer Value	■ ■ ■ ■ ◪

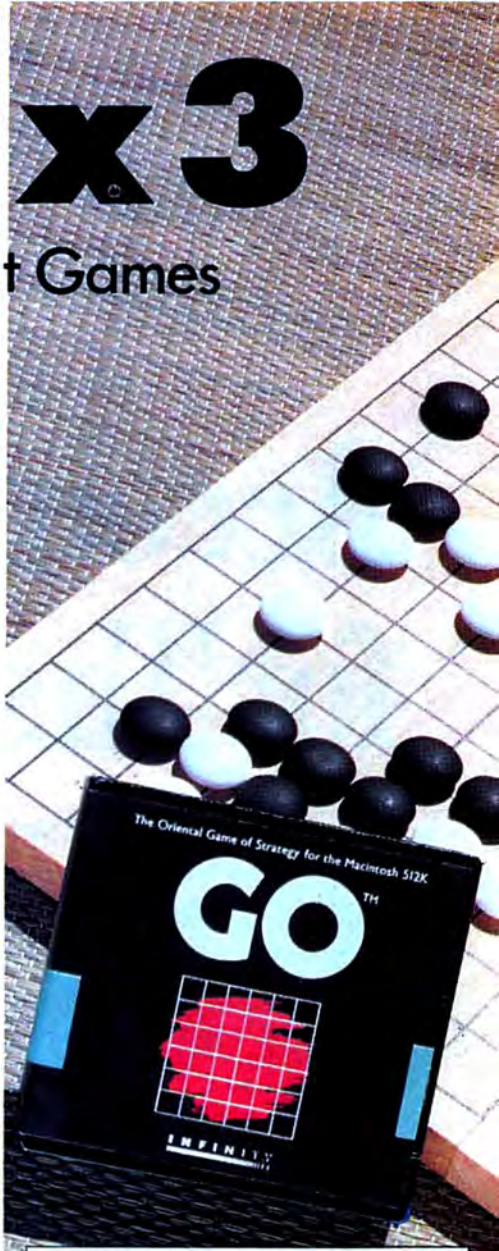
Comments: A powerful 2-D CAD program for creating engineering and architectural drawings. **Best Feature:** Full-featured geometry creation capability. **Worst Feature:** The heavy reliance on groups. **List Price:** $799. Published by Micro CAD/CAM, 3230 Overland Ave., Los Angeles, CA 90034. (213) 838-7851. Requires 512K+. Copy protected. *ADS-MGMStation-Architecture*, $125. *ADS-MGMStation-Electronics*, $195. Compu-Arch, 9348 Civic Center Drive, Ste. 101, Beverly Hills, CA 90210. (213) 271-1977. Not copy protected.

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Accounting for Taste

It's not just spreadsheets anymore. Here's the latest in the haute couture of accounting software.

BY SCOTT BEAMER

SHOPPING FOR AN ACCOUNTING program can be as tricky as finding the right color tie to match a Savile Row suit. Sometimes it's worth the time and expense to go to a custom tailor. Other times it's wiser to buy off-the-rack. If all executives took as much time to choose their software as they do to pick their ties, there'd be a lot less clashing of needs and performance.

Accounting is not a trivial matter. Choosing the right accounting program for you is going to take some work. Talk to the other people involved with your company's books. Talk to your accountant often. How big a program do you need? Can your hardware handle it? What sort of reports do you need? Will you be showing them to a bank loan officer, other potential creditors, potential investors?

The package you are about to buy may look pretty good today, but will it be adequate in a year? You might be able to add modules (and functions) one at a time, but will your hardware still be adequate with more modules and larger files?

There are several ways to go about buying an accounting package. Possibly you want—or require—a custom-made system. Some people want an off-the-shelf solution with no problems. These people must be fairly willing to modify how their books are kept to fit the program. Others will prefer to keep fiddling and modifying the program to adapt it to how they keep books. They may be fine tuning for as long as they have the program. Everyone will find elements of both extremes in their situation.

Don't make your buying decision based on hearsay or a salesperson's demo. Bring the package into your office and try it out with some real data. Most packages offer demos. Try out demos until you are sure this is the one for you. Compare several packages. Some companies have a money-back guarantee. Consider rentals. Though expensive, renting will give you a couple of weeks to try things out.

The number of specialized programs templates available is growing rapidly. Such things as bar code readers, real estate management and full professional office packages exist now. Medical and law office management remains weak on the Mac, but expect to see good packages coming very soon.

With several powerful new relational data bases coming out for the Mac, an explosive expansion of specialized accounting software available seems likely. As the business world continues to discover the Mac and its potential, more software publishers with accounting packages available for other operating systems will be bringing out products for the Mac.

The programs covered here were chosen as representative of the range of accounting software available on the Mac. There are many other packages out there, and quite possibly one of them will fit your needs better than any mentioned here. These are here because they're new or recently updated, and because they're illustrative of some facet of what's available.

BARGAIN BASEMENT

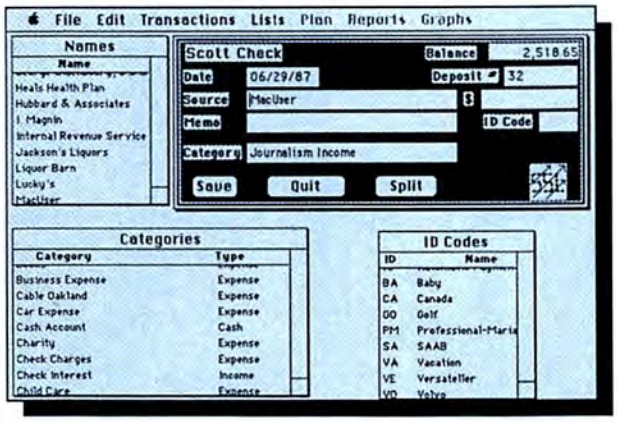
MacMoney currently ranks as the best choice by far among the personal finance packages. I've been using it for over a year, and nothing else out there tempts me to change. A lot of people use it for small business accounting. Best of all is the price, around $50 at discount stores. You get a surprising amount for your money, yet the program is designed for those who don't know much about accounting and don't especially want to learn.

MacMoney avoids accounting jargon and carries out its accounting functions concealed somewhat behind more pedestrian metaphors. Most users probably don't even know they are doing double entry accounting. For instance, the chart of accounts is called "Categories" and it doesn't require account numbers. All transactions are entered

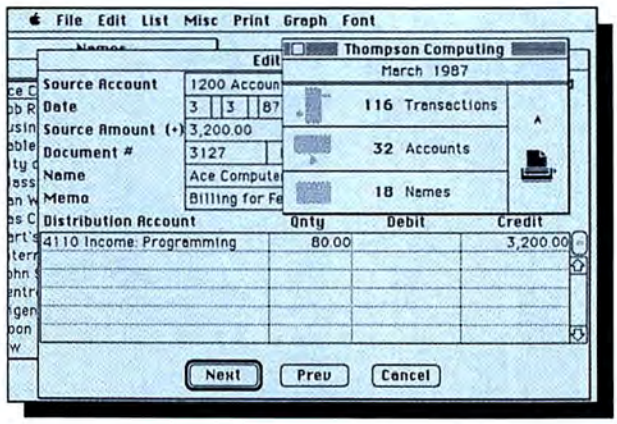
BRIAN AJHAR



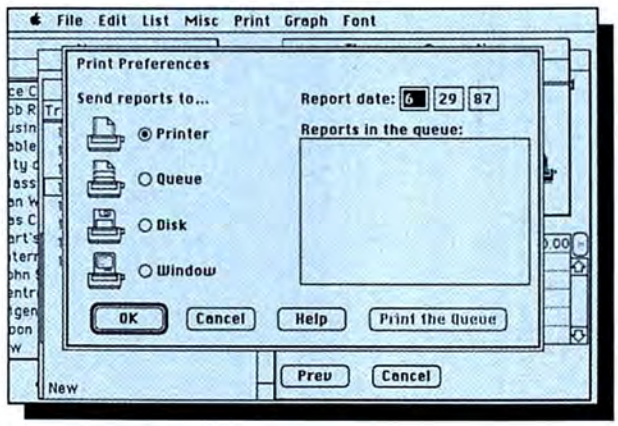
Accounting for Taste



***MacMoney*. All data entry forms look like checks. Clicking on a name fills in the related category, too.**



Using *In-House Accountant*, point and click on the Names lists to fill out the transactions form. The window in the upper right gives basic statistics.



***In-House Accountant*. Print Preferences lets you see reports on screen or queue for printing in addition to printing.**

through screens that look like checks. Data entry is highly automated, being done largely by point and click.

MacMoney's reporting facilities are especially strong. There are four standard reports and there are excellent tools for customized reports. Both standard and customizable graphics reports are available as well.

The manual is fairly good, with examples of how to set things up for different personal and business situations. There is a special section on how to prepare your year-end reports to help fill out your income tax forms. In fact, most of the necessary data can be transferred electronically to *MacInTax*, the superior Macintosh tax preparation program.

In-House Accountant bills itself as "Accounting for people who'd rather not." This program nicely fills the gap between home and small business accounting. While some of the better personal financial management programs can be used in limited small business applications, this is a small business program that also works for personal use. You just toggle off the invoicing section.

The program makes lavish use of the Macintosh interface. This is perhaps the cleverest and slickest use I've seen of the interface in accounting. It is definitely aimed at those who just don't want to deal with the books any more than they have to, but can't afford to pay someone to do them.

The first window you see has icons for transactions, accounts and names, with the number of each item currently in the data base. Double clicking the icon brings the list to the screen where it can be left throughout the work session. You will probably want to use all three.

To fill out a form, click on the appropriate name and account from the lists windows, then fill in an amount, indicating plus or minus. At the bottom of every list is the word "New" so you can add to a list on the fly. This is data entry as it should be. The program automatically assigns a new number to each transaction. (These may not be changed, maintaining an audit trail.) However, transactions can be edited or deleted at any time.

As is expected with version 1.0 of any program, all is not perfect. *In-House Accountant* bombed on me while I was trying the tutorial, and some of the buttons listed in the manual are not there on the screen. I expect version 1.01 will have fixed these minor glitches before this article comes out.

The manual reminds me of Apple's manual style. It looks nice and is well organized. Plus there's live tech support. A sample forms package is included, but the printouts are not adjustable on the page, and the data did not print within the appropriate boxes for me. You can print checks more than once if necessary.

Accountant, Inc. has four modules combined on one disk, and is more convenient to use than many of the separate module, multiple-disk packages. This program is advertised as "a simple, affordable, no-nonsense solution." I might add the word "barebones" also, although that term is more to describe its look and feel

The Barbecue Brothers would rather bake beans than count them.

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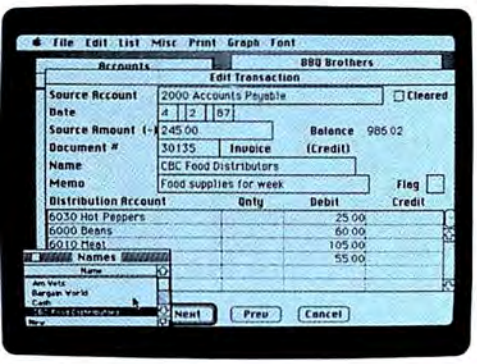
But it might not be, if Larry Keenan and Curt Fischer had to spend more time balancing their books and less time balancing their spices.

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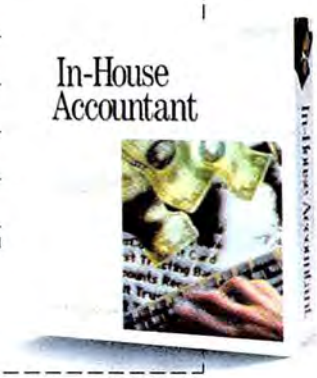
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Accounting for Taste

than its features or functions. It lacks the élan I have come to associate with the best of Macintosh software, but then, few accountants are known for their élan, either.

Accountant, Inc. is aimed at people with a limited budget who want full accounting power for their small business. There is no on-screen help, and the manual makes no attempt to humor you. The manual, with over 500 pages, is weak. It is full of typos and is poorly printed. It's due to be replaced soon. This, combined with the understated screens, will make those tentative about accounting all the more dubious about their own abilities and those of the program to get the job done.

Accountant, Inc. varies from the normal Mac interface in several clumsy ways. For instance, there is an additional menu choice called PrFont. It allows the user to select a different font or point size. However, selecting a different size will misalign data on forms and labels. Selecting a different font also causes the columns of numbers to misalign, making reports unreadable.

Over all, though, the program works fairly well. The range of features rivals much more expensive packages. It is possible to add additional journals. (The manual suggests a journal for credit card sales.) There is a form for making quotations to prospective customers. Mailing labels can be printed four up. There are elaborate coding and sorting facilities. Its inventory module is especially good, because of its close integration with both receivables and payables that keep it updated.

BEST DRESSED

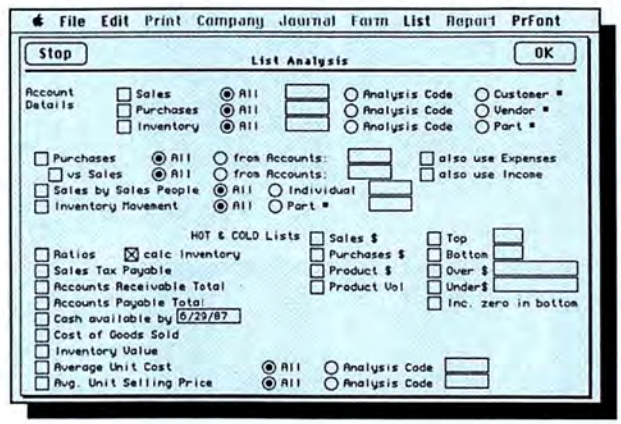
Rags to Riches definitely has style; its critics would say too exaggerated a style for an accounting package. Though it makes lavish use of the Macintosh interface, it freely ignores conventions when it wishes. An example is the File menu, which does not have New, Open, Close, Save, Save As or Quit.

This program is principally aimed at a company without a full-time bookkeeper. Every effort is made to remove any trepidation the user may have about keeping books.

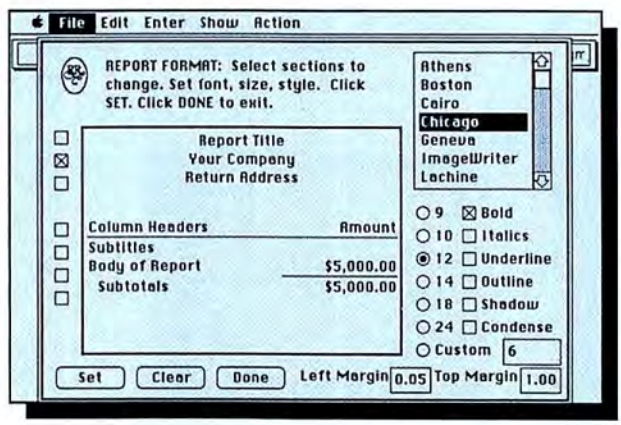
Chang Labs offers five modules, AR (Accounts Receivable), GL (General Ledger), AP (Accounts Payable), Inventory and Pro Billing. They freely admit that they consider their Professional Billing module the primary focus. It is suitable for anyone who bills by the hour. Billing can be automatically calculated to the quarter of an hour. Retainers and fixed charges can also be added to statements. This module will work as a standalone, but saves files for merging with the general ledger module, though the merge technique is not as automated as one would hope.

When beginning a set of books for a new company with the General Ledger, *Rags to Riches* provides a set of 24 templates from which the user may choose the closest fit. The list covers Accountant to Theater, including Farmer and Ice Cream Store. This is a good head start especially for the inexperienced.

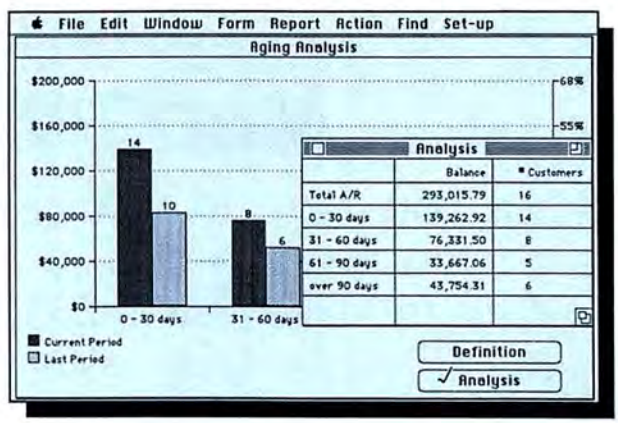
Data entry is sped up by offering clairvoyance for many data fields.



***Accountant, Inc.* makes elaborate analysis reports available, made possible by data coding.**



***Rags to Riches*. This screen is the secret to the best looking reports of any. No one else has anything like it.**



***Insight*'s Expert Reports are the best in the business. Clicking on part of the graph produces tabular data. Clicking on a line of the table produces the customer data card.**

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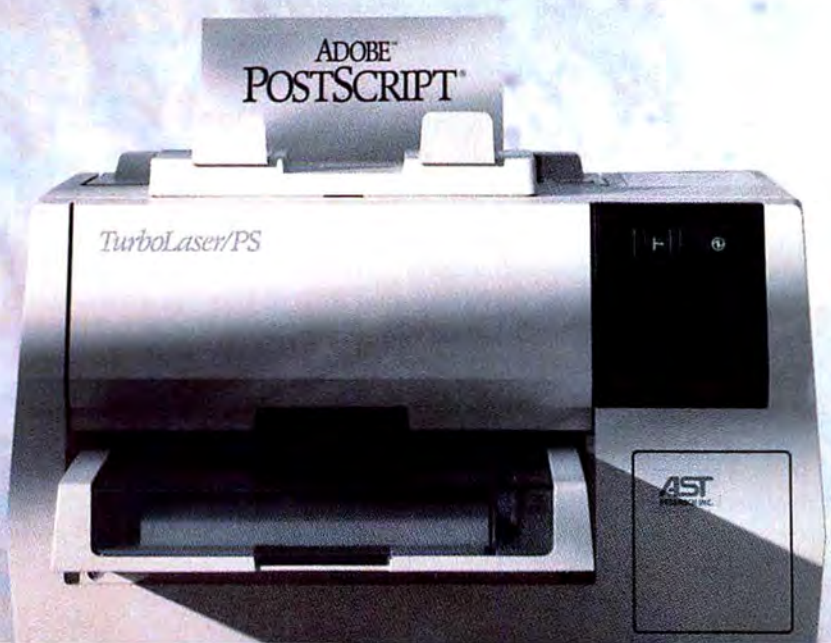
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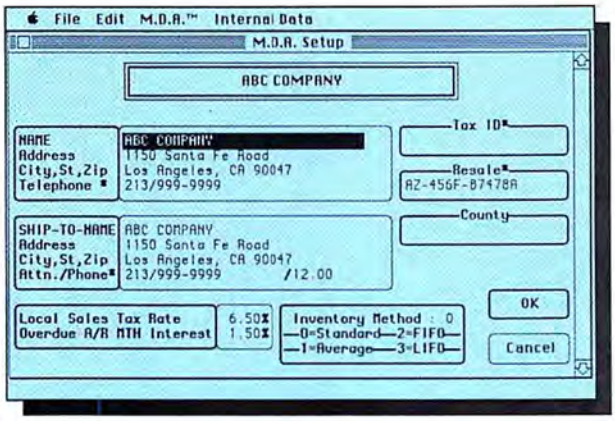
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Accounting for Taste



***Insight*'s data forms look like their paper equivalent. But how many of us would take the time to fill these out and update them manually?**



***Multi-User Desktop Accounting*. This is a new company set-up card. Note the four choices of valuing inventory.**

For these fields, whenever the computer feels the letters typed are from a unique record in its data base, it will suggest the complete entry. If you accept it, pushing Enter can fill in up to several lines of data. If its suggestion is wrong, keep typing.

Rags to Riches encourages the use of multiple windows. Double-clicking on a data entry will often bring up another window of information. For instance, double-clicking on a summary of client billings will bring up the statement for that client. Double-clicking on an item on the statement will bring up the window in which the data was originally entered.

Scrolling across the top of the screen at all times, like a ticker tape, is a series of help messages for the beginner that relate to the active window. While this may be reassuring for some, for many their first plunge into the manual will be to learn how to turn the thing off (easily done). More conventional help can be called up for any window, and is among the best I've seen. There are numerous alert boxes, some of which can be suppressed under Preferences.

Reports can be formatted for font, style and size on a line by line basis. This program has by far the best facility here of any of the programs considered. You can even add your logo to the letterhead.

The problem here is this program may give marginally qualified people too many opportunities to change things—sometimes allowing them to invalidate books according to generally accepted accounting principles. An example would be the ability to void any entry on any invoice. The manual points out that this is of questionable acceptability to accountants, but lets you go ahead and do it. In the end, most users will actually find here some of the fun associated with other Macintosh software products, but rarely associated with accounting.

Insight gets my vote for the best-looking packaging, best demos, best manuals and best-looking screens. Many people will find it does more than they expected to be able to achieve with a microcomputer.

Its strength is what they call "Expert Reports." These are the reports and analyses for the executive who wishes to keep well informed about details of the company's financial status. Many graphs can be called up, and clicking on a portion of a graph will produce the data in tabular form. Clicking on an entry in the table will produce the basic data entry card for that item. Disappointingly, the graphs can only be printed as screen dumps, and can't be exported for further enhancement.

Insight expects you to work with multiple windows open at the same time. If you're jumping around among the various parts of the program, there's a palette of the major lists and forms. There's also a window menu list that lets you quickly bring the window of choice to the top of the pile. Data entry is highly automated, as is posting. Statements and forms can be printed on plain paper or preprinted forms. Tech support is free (800-262-6620) for 90 days, after which there are various pay-per-call options.

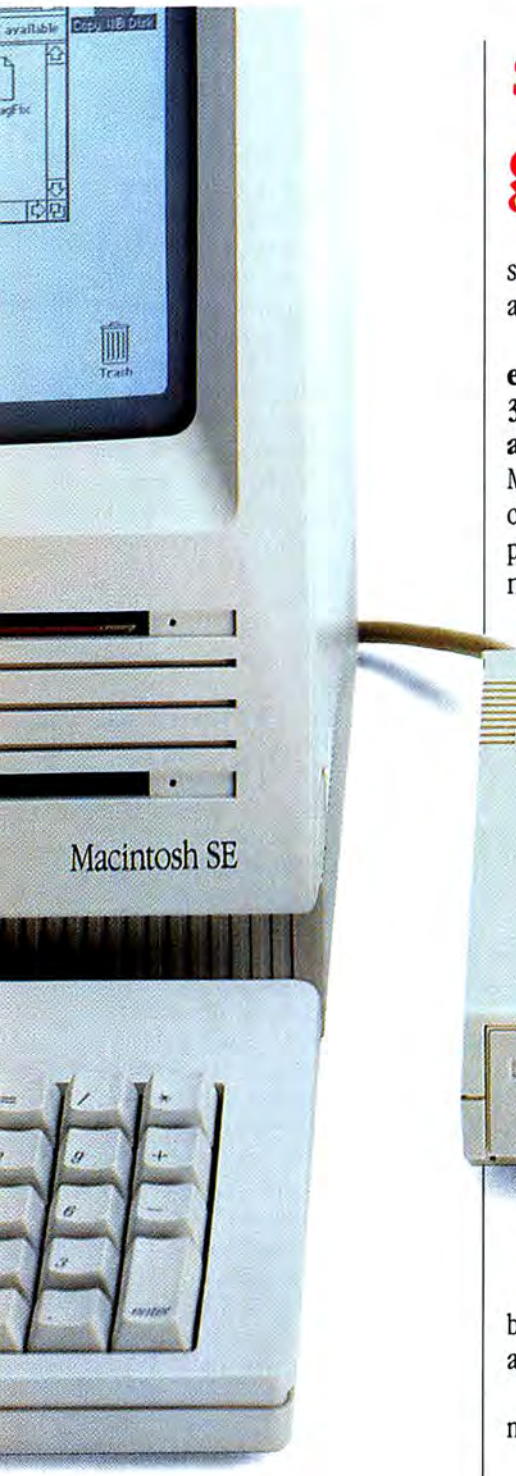
This product is a distinct pleasure to use. It looks great and works well. This gives the user pride in his work and confidence that the program does things correctly. A multi-user version is expected out soon. Early next year should see the inventory module as well.

DATA BASES IN DRAG

Multi-User Desktop Accounting (*MDA*) is a template written for *Omnis 3*. It is available in both single-user and multi-user versions. and includes four modules under a single menu: AR, GL, AP and Inventory. Surprisingly enough, a full version of *Omnis 3*, not a runtime version, is included when you buy *MDA*. Other *Omnis 3* templates are available for the Payroll module, graphics and customizing the reports. A good demo packet is available for $30.

MDA is a large, full-featured package. It is very convenient, having all modules integrated in a single menu. Posting and updating records are very easy and partially automated.

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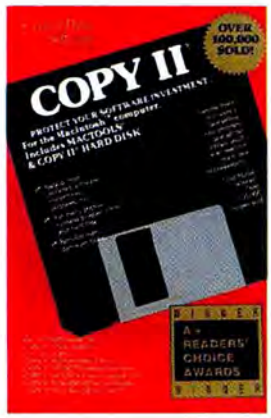
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Accounting for Taste

There are numerous features, some rarely found among other accounting packages, such as bank reconciliation, Reps-Sales Activity, 12 or 13 accounting periods, automatic credit checks, the possibility of opening previously closed periods while maintaining an audit trail, update of inventory prices by percent, up to five quantity pricing levels and six price list levels.

The documentation is very good. There is an additional 40-page tutorial and set-up pamphlet. Though it's all printed very clearly, with a nice set of index tabs, it is printed in about 6-point type, too small for my old eyes to read very much or for very long.

Several users can access the same file at the same time, as the program uses record locking, not file locking. However, all but one user must log off before any posting can be done.

The program's shortcomings, partially due to limitations in *Omnis 3* include: all screens in one font and one size, as are all reports; only one window is visible at a time; customizing a report requires buying a separate module; many windows crop data and require horizontal scrolling to see all of one line. There are good alert boxes and error trapping, but there is no on-screen help. The source code is locked, but the publisher will provide a schematic adequate for an experienced relational data base programmer to modify the package. Tech support is still iffy, as this is a start up company.

SBT Database Accounting Library. I was prepared to hate this product from the moment I realized it was a direct port of a set of *dBASE III* templates from the MS-DOS world. In fact, if you use it with Versasoft's *dBMAN*, it pretty much turns your Mac into an IBM clone: no desk accessories, no menu bar, no mouse. Running it with Nantucket's *MacMax* is better. You keep a menu bar and desk accessories, some scroll bars and some mouse control. But the accounting program is still controlled unrepentently by MS-DOS style prompts. If you've used your Mac to communicate with a large BBS, you get the idea of how it looks and works.

Choosing the right accounting program takes some work. Talk to your accountant often.

This package is included here because it may be the best accounting package available to Mac users, even if it has none of the look and feel of Mac software. Remember, the idea is to get the job done, not look like a Mac.

While most Mac accounting packages offer three modules, and some offer four or five, SBT has 12. The four-module set I evaluated was on 11 800K disks, and took up over 4 megabytes of space before it saved any files.

The modules currently available are:

Accounts Receivable
Time and Billing
General Ledger/Finance
Project/Job Cost Accounting
Accounts Payable/Check
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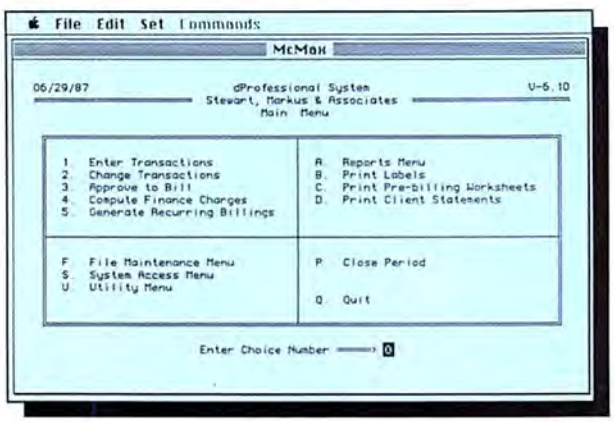
The company behind it is over 5 years old with about 60 employees and is highly efficient. Orders received before 2 PM are shipped the same day. Tech support is live and free. Trial disks are available for every module, $9 with limited documentation, $40 with full documentation. Full credit is given if the complete version is later purchased.

Documentation is on the order of that shipped with *Excel*, multiple volumes better measured in pounds than number of pages. It is dry and humorless, but very professional. There are numerous tutorials and a lot of sample data.

The capabilities of these templates are of a scale not contemplated by any other Mac accounting software. For example, the Payroll module allows the user to customize the check printing. It adjusts checks for vacations, supplements or termination. Hourly, salaried, commissioned and piecework situations are handled. It can calculate deductions for multiple states, and allows employees to be taxed in either employment or residence state. Other modules are similarly elaborate. Each module can provide accounting for up to 99 companies and 999 departments for each company.

SBT is also available in a Xenix version. Someday, a Unix version can be expected. There is a multi-user MS-DOS version that can support up to 254 users all working on the same data files. Versasoft is expected to have a multi-user version of *dBMAN* out very soon. A compiler will follow. Nantucket has similar plans for *MacMax*. It may soon be possible to have IBMs and Macs on the same network working on the same set of books.

As you can see, there is a rather broad range of accounting packages



SBT Database Accounting Library: **how to turn your Mac into an MS-DOS machine. Don't knock it. It is the most complete and professional package available on the Mac. Just wait until you network Macs and IBMs together.**

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for the Macintosh business user to choose from. We cannot repeat too often the need to try out as many as possible to find the one perfect for your accountant. Keep at it; you'll eventually balance your books.

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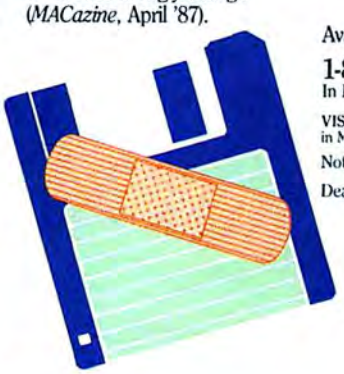
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- lists every imaginable error condition
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- takes you step-by-step through each recovery effort
- shows you how to avoid problems

"The definitive product for troubleshooting on the Macintosh™" (*Macworld*, April '87). It "stand[s] head and shoulders above any other product like it . . . I can't recommend 1st Aid Kit strongly enough" (*MACazine*, April '87).



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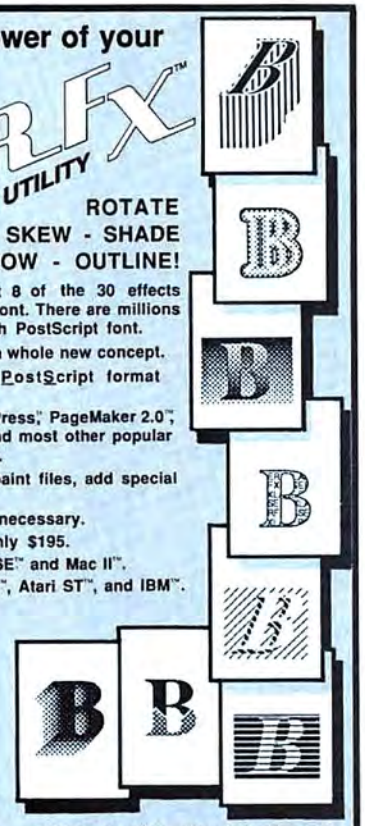
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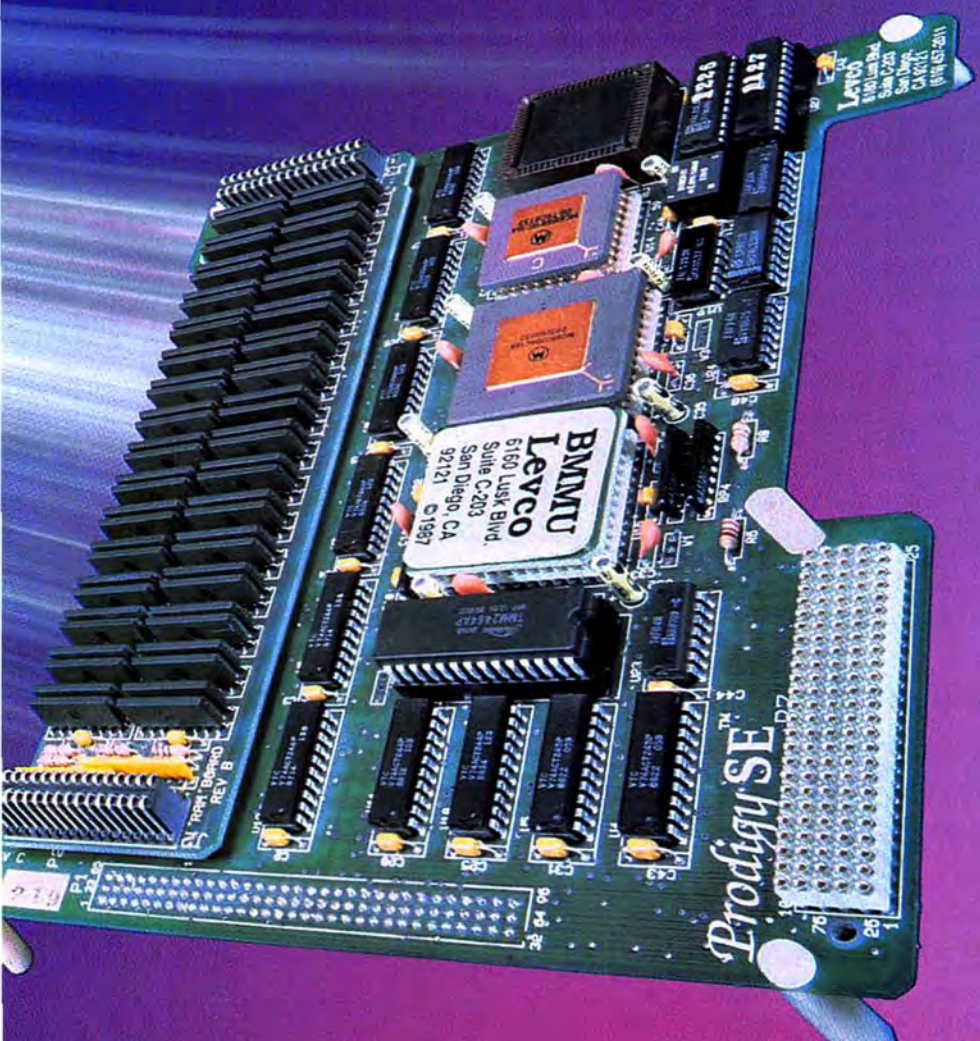
The Prodigal son of the Mac motherboard offers unsurpassed speed and power.

BY GARY E. HIRSCHBERG

MY JOB IS TO USE MAINFRAME computers day in and day out. Has been for over 25 years now. But I also use a Mac since there are many applications for which it is the best tool. However, I get frustrated at times with the relatively slow response time of the Mac (in relation to the mainframe) on heavy data base applications. My solution was to get Levco's Prodigy Board for my SE. This add-on board has a Motorola 68020 processor (the same processor used in the Mac II) running at 16 megahertz—twice the speed of the SE's own 68000—and an optional 68881 math processor for calculation intensive operations.

While I in no way believed the advertisements stating a 4 to 8 times increase in speed and up to 30 to 100 times for math intensive applications, I did expect a significant increase in throughput and response time. After working with this enhanced SE for a few hours, I found myself grinning with pleasure—the Prodigy is a super piece of equipment that can make returning to a normal SE a frustrating experience for the power user.

In order to quantify what the actual improvement in performance was, I ran some benchmark tests and set about comparing the performance of existing software applications using real data that I run frequently. Being a firm disciple of the scientific method, and wanting the results to have as much practical real meaning as possible, my simple benchmarks turned into an extensive series of tests. Here are my results, along with some observations on testing procedures which you may find helpful in evaluating similar products.



SPECS, TESTS AND REALITY

Specifications are supposed to give the prospective buyer a way of judging quality or rating various alternatives. But numbers, in and of themselves, can be misleading. Unfortunately for the neophyte, they often make up the hyperbole used by advertising people and are bandied back and forth as a show of expertise by the unknowledgeable. Furthermore, in a complex system of parts like a microcomputer, they can be taken completely out of context or used in ways not relevant to the real world.

Here's an example from the audio industry. Several years ago it went through a period of rating the power of hi-fi equipment in watts measured

in "music power." Music power had the advantage of raising the wattage numbers considerably over the standard RMS rating and giving customers the idea they were getting a lot for their money. But the consumer eventually woke up to the fact that 60 watts per channel music power in no way compared to 60 watts RMS, and reality re-entered the world of advertising: music power is no longer mentioned.

Another item from the past, more related to the current situation in the computer world, was the American automobile industry's penchant for rating horsepower in the late '50's and early '60's with nothing attached to the engine. This also produced super numbers, but had little relation to actual performance—especially when air conditioners and other load devices were attached to the engine. Eventually the public realized something was amiss because European cars rated at half the horsepower performed equally well, if not better than, their American counterparts.

The world of microcomputers today is filled with announcements quoting processor clock speed, disk access time, seek time, data transfer rate, ad infinitum and ad nauseum. In actuality, however, what any real user is interested in is *throughput* or *response time*. This is a function of a multitude of factors, relating to both hardware and software. In the hardware arena we have processor architecture and instruction set, clock speed, memory size, disk access rate, seek time and data transfer rate, to name but a few. Software has two components: the design and efficiency of the operating system, and the same for the application program itself. Refinements affecting the interface between the two further complicate the situation: how much operating system code is in ROM, whether a RAMdisk is used and if so, what's in it, etc.

Testing two different data bases adds another level of complexity, as each data base has its own peculiarities. These may require using different techniques, even for the same end application, if optimum performance is to be obtained. Comparing any sets of numbers by themselves means little in an actual operating environment.

The scientific method requires that all variables but the one being tested be held constant between the two systems. If that is accomplished, then any variation in performance can only be the result of the difference in the one variable. This condition is extremely difficult, if not impossible, to attain in a modern computer system given the multiplicity of factors involved during the performance of any real task.

The tendency has unfortunately been to single out various components and compare isolated specifications as a means of evaluating one machine, board or program versus another. Processing power is often compared using pure computational benchmarks like the infamous Sieve, Dhrystones and Fibonacci. While these are somewhat helpful in providing a common ground for comparison, they are of questionable relevance to the real world as they measure brute processing power performing specific single purpose computational tasks—unlike the mix in a typical application program most users run. It's like buying a car based on g-ratings in a skid pad test for use in driving around Manhattan—a true exercise in irrelevance.

The only way to effectively judge the benefits of adding a performance boosting add-on, or to rate items such as disk drives which have different performance characteristics, is to run benchmark tests of real applications using real data. Mainframe and minicomputer users have been doing this for years. Simply timing program opens is of limited value as most users do not sit at their desk all day opening and closing programs.

THIS TEST, THIS REALITY

Timing tests were run using 35 different operations involving eight different systems on eight different applications. When the Prodigy is installed, the user has the ability to start up the system bypassing the Prodigy board, thereby running in standard 68000 mode, using the Reset and Interrupt buttons of the programmer's switch. The tests were therefore all run on the same machine, using this technique. Multiple tests within a given application were all run in the same sequence. Furthermore, a master copy of each application was used at the start of each test (68020 and 68000) so that each application was in an identical state at the start. Each series of tests on a given application system was run twice and the times were averaged. The Apple system cache was not active during any of the tests. Timings were made with an HP 41CX calculator in stopwatch mode. Table 1 shows the specifications of the hardware on which the tests were run, and Table 2 lists the software.

DETAILS, DETAILS

Three 68020 boards are currently available from Levco: the Prodigy SE for the Macintosh SE, the Prodi-

Table 1—Hardware Configuration

Base Hardware:	Macintosh SE with 1M RAM Internal 20M Hard Drive
Coprocessor:	Levco Prodigy SE with 1M RAM 68020 running at 15.67 megahertz 68881 math coprocessor (optional)
Operating System:	*System* 4.1 *Finder* 5.5

Table 2—Software

Software	Version
Cricket Draw	1.01
Double Helix 1+	r32
Excel	1.04
FileMaker Plus	1.0
MacWrite	4.5
MacInTax	1986
Reflex for the Mac	1.0
Word	3.0

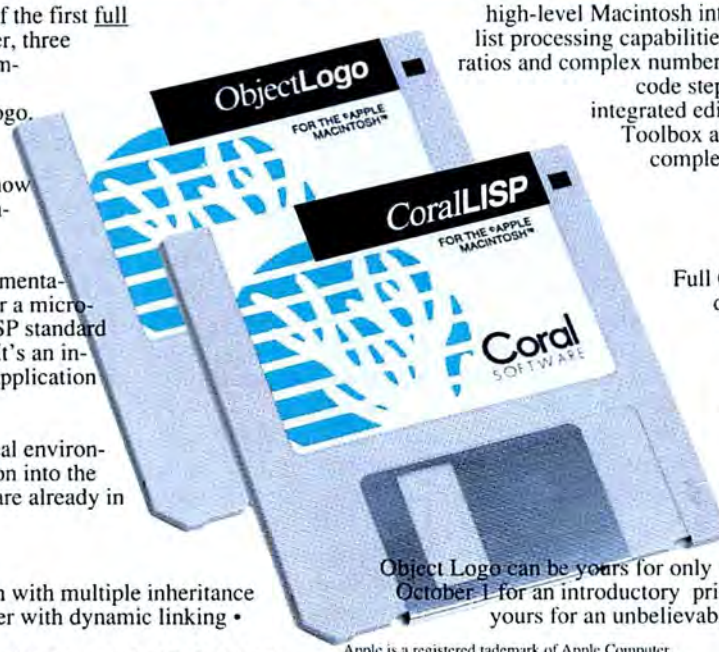
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gy Prime for the Macintosh Plus and the Prodigy 4 for 512K Macs. The 68881 floating-point math coprocessor chip is standard on the Prodigy 4 and optional on the Prime and SE. Installation of the board with the 68881 essentially upgrades a Mac to *almost* the characteristics of a Mac II. However, since the 68020 must still go through the motherboard with its 16-bit datapath for I/O functions, the full 32-bit datapath of the 68020 is not available for these operations. Programs not written to take account of the additional hardware instructions available in the 68020 nor able to take advantage of the 68881 directly will obviously not show the same increase in performance as those that are. However, many major programs, such as *Excel, Trapeze* and *Double Helix,* are, and as more and more software houses upgrade their software, this will not be a factor.

The 68020 has an internal instruction cache where it remembers the last several operations performed. The processor will not reaccess memory to retrieve these operations if the operations need to be repeated. This instruction cache can be turned off through the Control Panel (*System* 4.1 and higher—Levco provides a DA for earlier Apple Systems).

Although I experienced no compatibility problems with any of the software tested, Levco informed me that compatibility problems do exist with some software that does not strictly follow Apple's guidelines or that is not compatible with the 68020 (these programs would also not function on the Mac II). Turning off the instruction cache can sometimes resolve the problem if the program contains self-modifying code as such code will interfere with the cache.

The most notable example of incompatibility is *MacWrite*. The version I tested—4.5—is not compatible with the 68020. Levco gets around this problem with a patch to *MacWrite* that is activated through the *Prodigy Control Panel* (a DA on Systems earlier than 4.1). If you want to use *MacWrite,* you turn on the "MacWrite 4.5 Sniffer." Failure to do so produces a System bomb. Unfortunately, you cannot set the Sniffer On as the default condition; it must be turned on each time you boot up (turn the Mac on).

The 68020 incompatibility problem also rears its head on the Mac II—*MacWrite* 4.5 doesn't run. [*Editor's Note:* MacWrite *version 4.6 was released just as we went to press. It works fine with the 68020.*]

To gain an additional boost, Levco reads the contents of ROM into RAM, thereby eliminating the necessity to go back to the motherboard and the 16-bit datapath for access to the QuickDraw routines, etc. Although this undoubtedly boosts performance, it does take away from available RAM. Since the Prodigy does not use the memory on the motherboard, you're left with approximately 750K if you purchase a 1-megabyte Prodigy. This presents a problem if you want to run anything substantial under *Switcher,* such as *Word* and *FullPaint*. For power software *Switcher* addicts, a 2-megabyte Prodigy is almost a necessity. Smaller programs like *MacWrite* and *MacPaint* will run fine together.

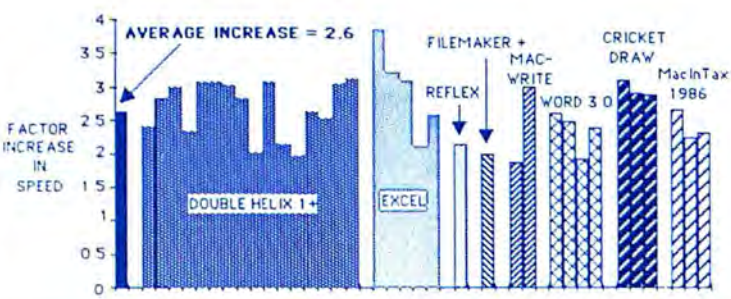
The current Prodigy Prime and SE boards are available in 1- and 2-megabyte configurations. A 4-meg version should be available by the time you read this. Both boards have provision for adding a MC68851 paged memory management unit when it becomes available. This chip supports a virtual memory environment and multi-tasking and is required for UNIX (A/UX) when and if it becomes available. Addition of the 68851 requires upgrading to a minimum of 4 megabytes and would permit the Prime and SE boards to utilize RAM configurations of 8, 16 or 32 megabytes. Levco plans to introduce these RAM configurations when the 68851 becomes available.

The Levco manual states that the Prodigy boards are generally compatible with most SCSI hard drives except for those "rare few whose code is upset by the faster 68020 processor." The manual goes on to say that "chances are good that these drives will not operate with any other 68020-based machine including the Macintosh II until the code is recompiled." This is one area that the prospective Prodigy owner should be wary of and, if he or she has a hard drive, should check out carefully before making a purchasing decision. I also have a Dataframe XP20 and the first time I hooked it up it bombed the system. After talking with Levco technical support, they informed me that SuperMac Technologies had upgraded their software and that version 2.6 supported the 68020. I downloaded it over my modem and things worked fine. However, my Mirror Technologies 20MB tape backup doesn't work and Mirror tech support was unaware of the problem and no help. I make tape backups in the native 68000 mode, but it's a pain.

SO, WHAT ARE THE RESULTS?

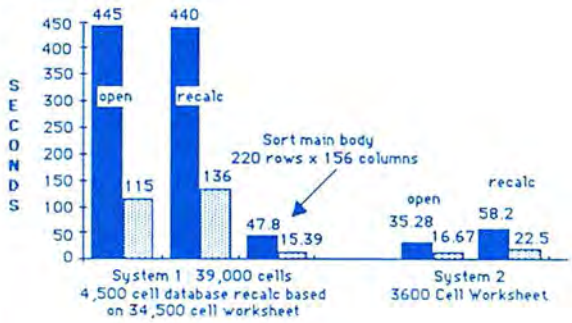
The average increase in speed for all operations in all programs tested was 2.6 times. The greatest improvement shown was in *Excel* where speed of execution increased by an average factor of 3.5, with an increase of 3.9 in one instance. This is to be expected since *Excel* takes full advantage of the 68881 and is a calculation-intensive program. The results for the various tests are shown in Figure 1. More detail on

Summary of Tests Results

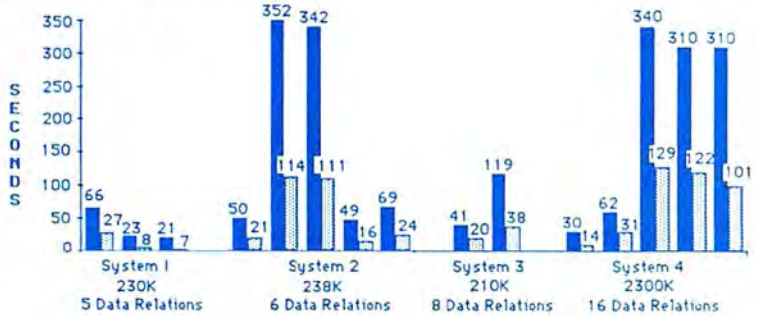




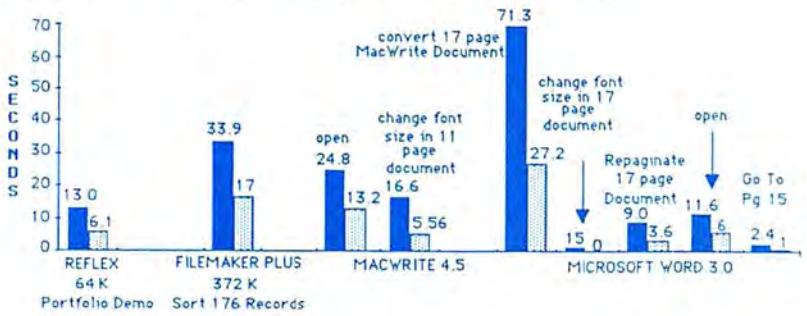
Excel Tests



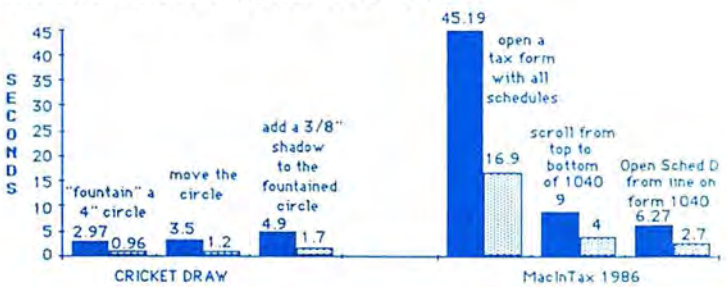
Double Helix Tests



Reflex, FileMaker Plus, MacWrite and Word 3.0 Tests



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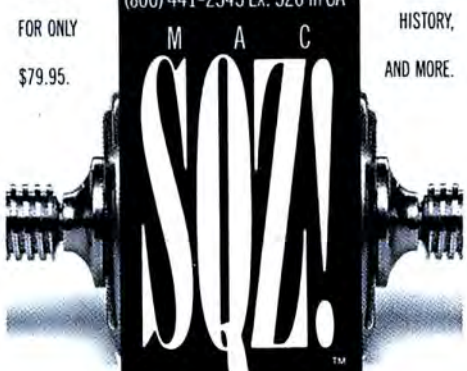
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Supercharged SE

the individual tests performed can be found in the accompanying charts.

These are significant improvements, both statistically and, more importantly, practically in a daily operating environment. In the case of a 9-megabyte *Double Helix* purchasing system (not shown in Figure 1 because of scale), the decrease in response time in one operation from 1 minute 15 seconds to 15 seconds and a report production from 1 hour 15 minutes to 15 minutes brought the system back to the realm of practicality.

But the numbers do not tell the whole story. The improvement in response time in opening and closing folders, scrolling, and opening and closing programs effectively eliminates waiting for these operations. The system responds more quickly and is a joy to use. It could be argued that waiting 1 second for a screen refresh when scrolling instead of it being practically instantaneous is not worth much of an expense. However, after using the Prodigy SE for a couple of hours, you find yourself saying "come on, come on" when returning to a normal SE, let alone a Mac Plus.

PRODIGY SE VERSUS MAC II

How does the Prodigy SE compare to a Mac II? The major difference between the two machines (from a processing power standpoint) is that the Mac II is a full blown 32-bit machine, having the 68020 on the motherboard. How much real difference would this make to the majority of users?

While I would not classify this as a definitive test, I went down to my local store and ran nine tests on a Mac II configured with a 20-megabyte drive using three of the *Double Helix* collections used for this article. The disk configuration was important because the 40-megabyte and up drives are considerably faster. In three of the tests, the times were virtually identical; in the other six, the Mac II was actually slower by between 5 and 10 percent. These results are consistent with other observations reported in the press that an accelerated SE outperforms a Mac II. However, practically speaking,

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and without further extensive tests, I would call it a draw at this point.

The Mac II, with its full 32-bit architecture and open architecture, is obviously a more flexible and potentially more powerful machine. However, if you don't need all those slots, the smaller screen doesn't bother you, and you're not a color maniac, the SE with a 68020 such as the Levco Prodigy offers the same processing power in a nice small and transportable package—the Mac II is definitely made to stay in one place.

THE PRICE OF POWER

There are currently four other manufacturers besides Levco who advertise accelerator boards—MacMemory, General Computer, Peak Systems and Radius—and the retail prices vary, as does the design of the boards themselves. In addition, the street price varies depending on location, your dealer and the manufacturer, and it's this price that has meaning to the prospective buyer.

At the risk of being incomplete, I am leaving out specific pricing information because by the time this article is published it will be out of date. Suffice it to say that equipping an SE with a 68020 board containing a 68881 math coprocessor should run between $1500 and $1900 list, and about $1200 to $1550 at street prices. This puts the machine in the same price class as the Mac II.

Is it worth the expense? The answer to that must be left to the individual user. If you want to see how it would really benefit you, take a copy of your important programs and data, go down to your friendly computer store, and test them out on a Mac II. If they are I/O intensive, be sure to use a drive similar in performance to the one you have. The results you get will be close enough for an intelligent evaluation. However, a word of caution: don't take your checkbook along if you yield easily to temptation.

GARY HIRSCHBERG IS A FREELANCE CONSULTANT WHO SPECIALIZES IN THE MAC AND DATA BASE APPLICATIONS IN PARTICULAR. HE LIVES IN MAMARONECK, NY.



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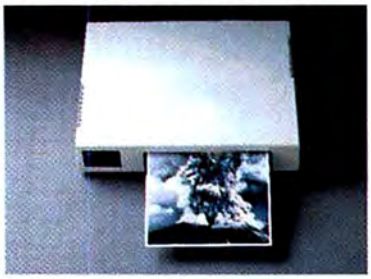
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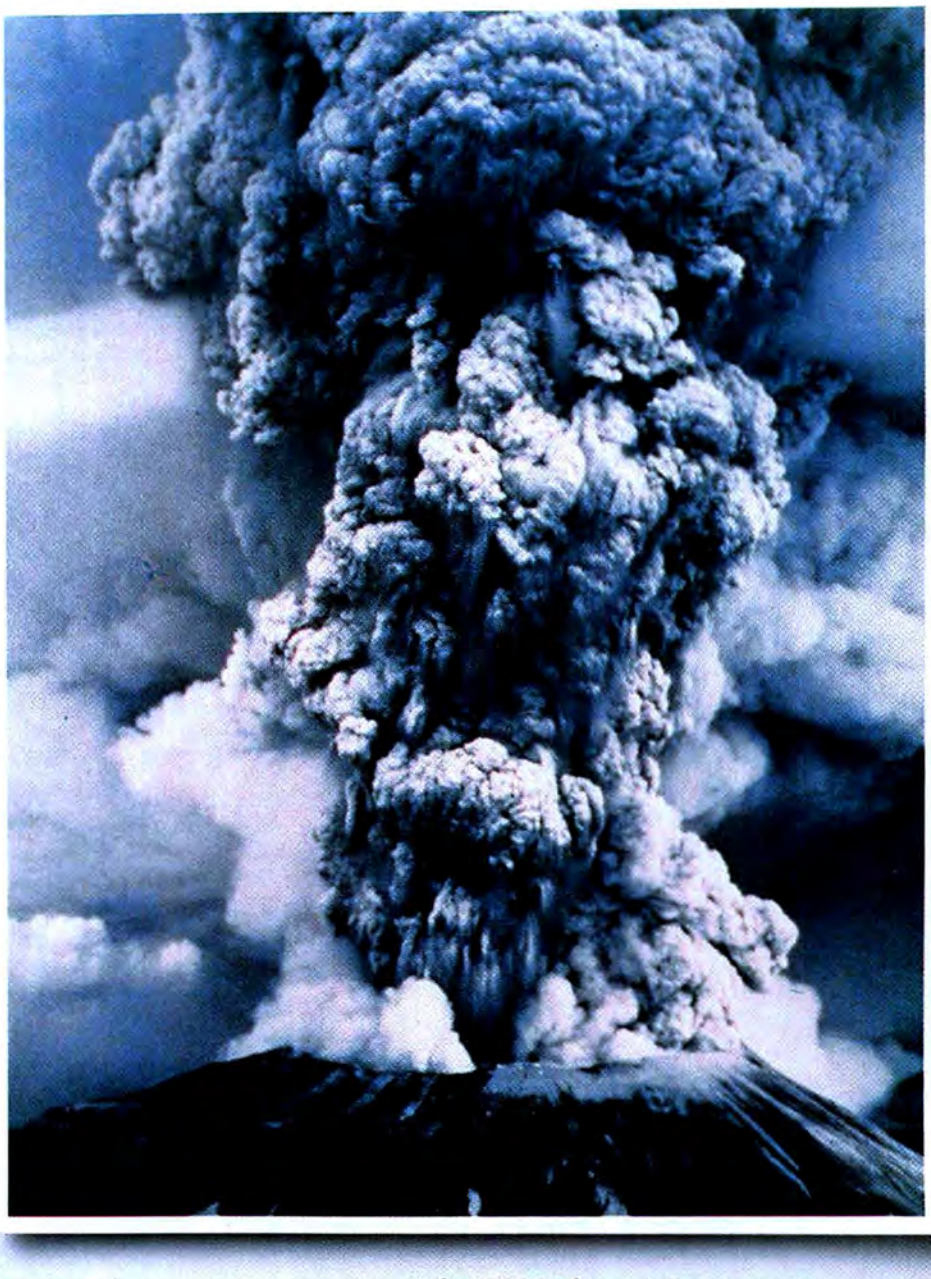
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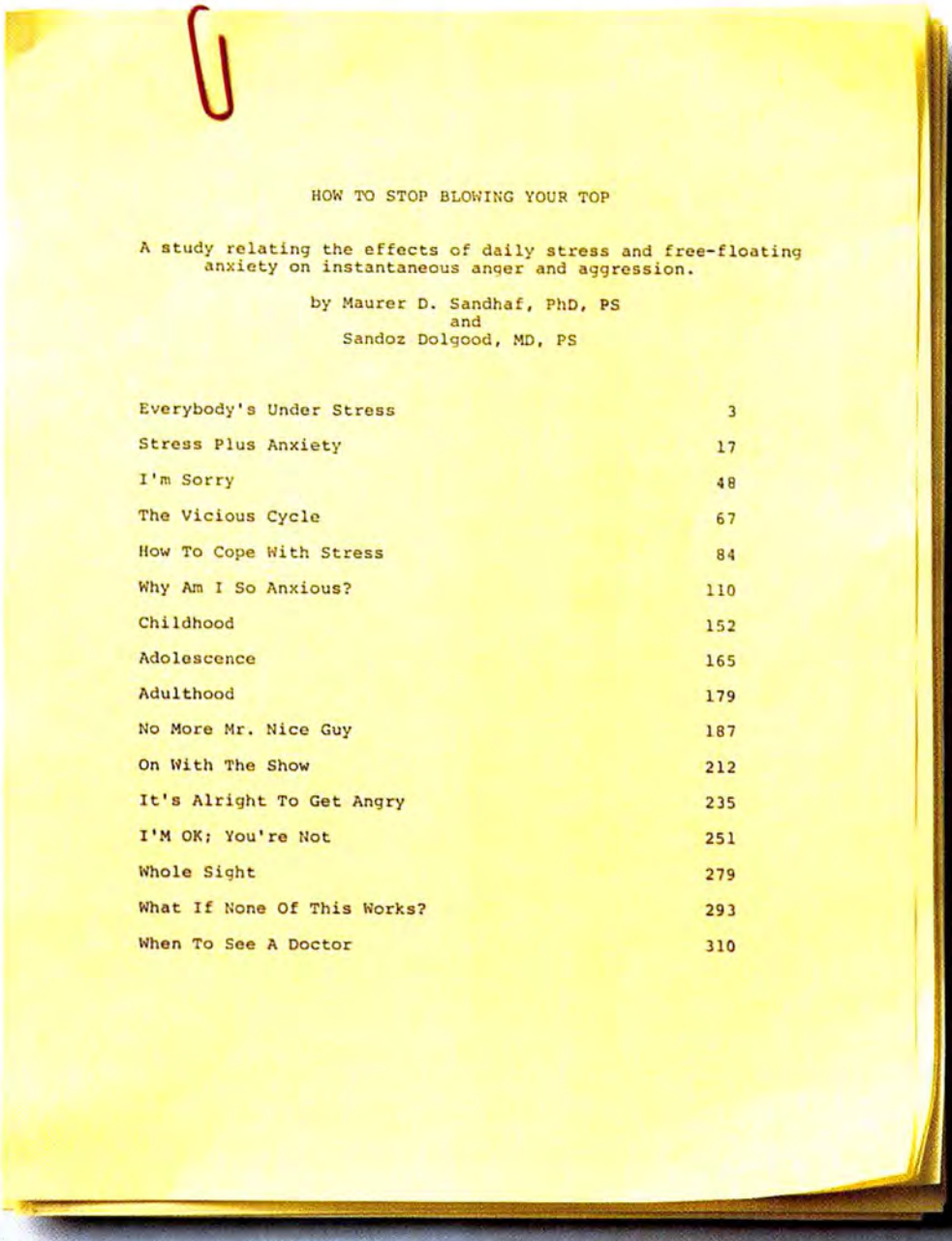
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In a Manner of Speaking

INNOVATION INSPIRES IMITATION. Often a good idea also inspires other good ideas. Take 3M's Post-It Notes, those ubiquitous self-sticking slips of paper. They have spawned *Comment*, a neat Desk Accessory from Deneba Systems. This is an upgrade to *Memorandum*, which was formerly marketed by Target Software, although it was written by Deneba.

Comment can be used to annotate documents created with almost any Macintosh application. Files on the desktop can also be annotated. It also has a Note Pad, an alarm clock feature and a *Note Manager* that allows you to organize, edit and print your notes. *Comment* has the potential to be a complete note-taking and management system but, unfortunately, it still needs a little work.

Like any DA, *Comment* must be installed in your *System* file or files.

Comment lets you put notes anywhere, in any file, at any time.

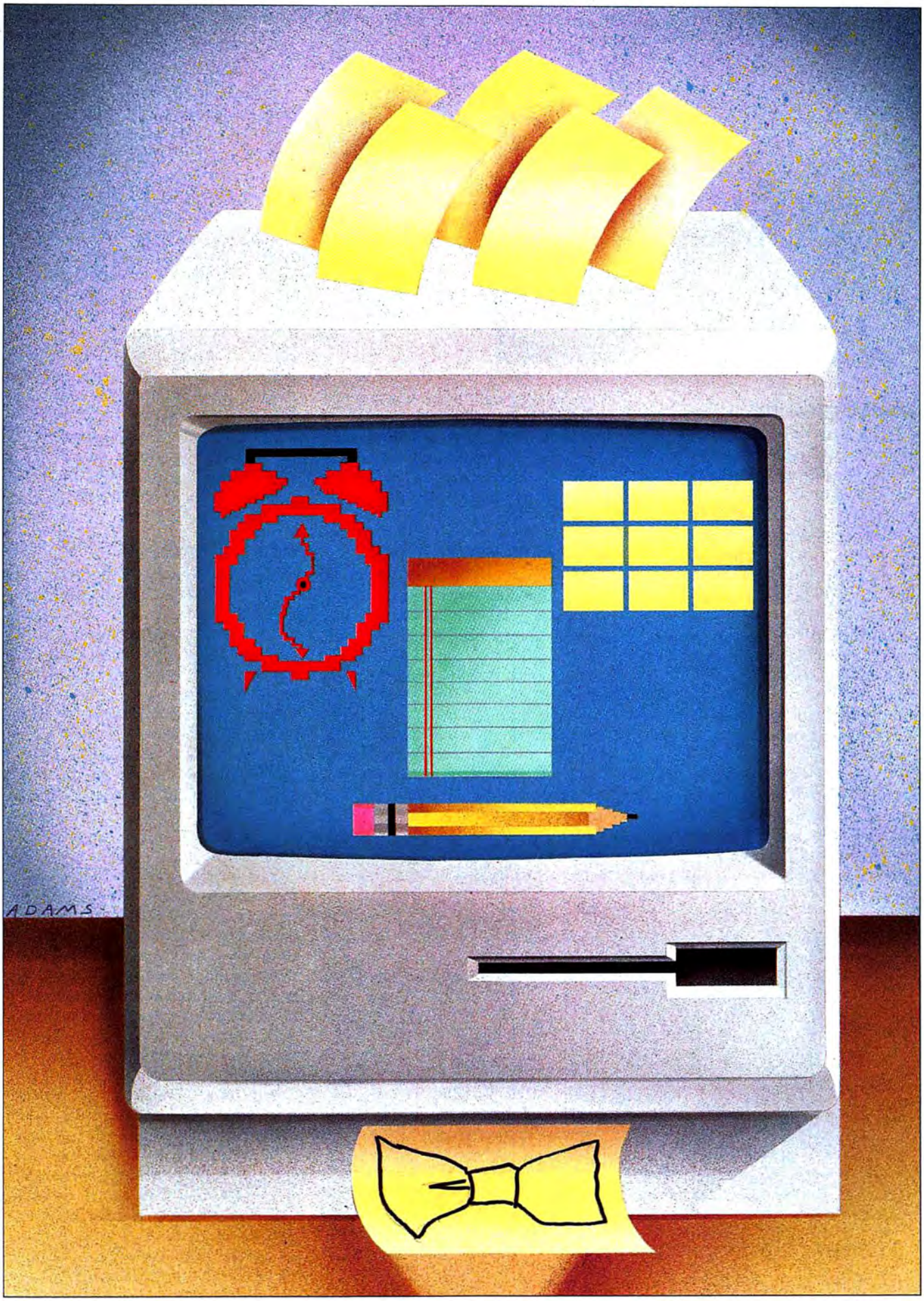
Installation is easy; but note that version 3.2 or higher of *Font/DA Mover* is required. The latest version of *Font/DA Mover* comes on the *Comment* disk.

Comment occupies a minimum of 90K of disk space. Notes are stored in their own files within the System folder, not with the documents to which they are attached. So, as you write notes, demands on disk space grow. For this reason, using *Comment* with 400K drives, although not impossible (at least with some applications), is not recommended. Even with 800K drives, the files can be a tight fit.

In operation, *Comment* reserves a portion of RAM for its Note Files, which must be loaded into memory each time the Mac is turned on or the *System* is changed. These memory requirements mandate a Fat (512K) or larger Mac (but the Mac XL is not supported). Furthermore, all *Switcher* partitions must be enlarged to accommodate *Comment* and its files.

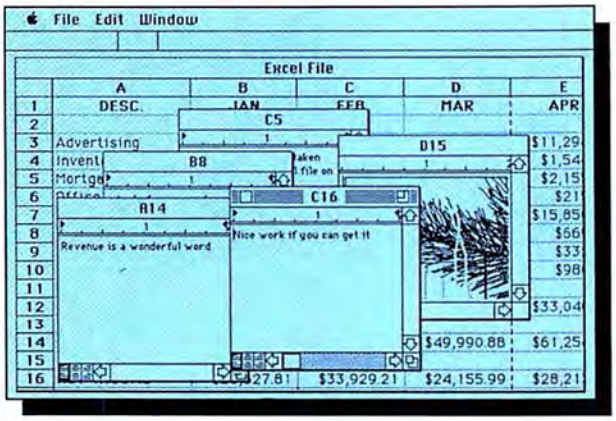
CommentLoader, an automatic launch program, is included to expedite the loading process. The original version of this program had some trouble with some applications. For example, with *PageMaker*, double clicking on a document to launch the application did not trigger the DA—annoying, since *Comment* will abort any attempt to open a document if it is not already in memory. The latest version (1.1) works fine with *PageMaker* and *Word* 3.01, and, in fact, with almost all applications.

BY CARLOS DOMINGO MARTINEZ



JENNY ADAMS

In a Manner of Speaking



Comment **can attach notes to cells in a spreadsheet, like *Excel*, or blocks of text in word processors. Either text or graphics may be placed in a note. Show Visible Notes displays them all at once.**

PASSING COMMENTS

The first time a disk with *Comment* is launched, you are prompted to open a default file called Notes. If this default file is present, it opens automatically. A Note File by any other name, though, must be opened manually. Re-selecting the DA brings up a Dialog permitting access to other Note Files. When active, *Comment* displays an asterisk on the Menu bar. All commands are accessible from the Asterisk menu and a full set of keyboard shortcuts are also supported.

Comment notes are created in a mini word processor that has adjustable margins and justification. A Type Specs dialog lets you choose fonts and styles. And while a note may be up to 32,000 characters in length, practical limits are determined by available memory. Either text or graphics may be placed in a note but not combined. Cutting and pasting between notes as well as between notes and applications is supported. But be aware that *Comment* copies into the Clipboard any text selected as a note's point of attachment.

RANDOM COMMENTS

Comment creates four types of notes. Standard notes are attached to a specific point in a document, like a cell in a spreadsheet or a block of text in a word processor. If the attachment point is relocated, the note remains attached. "Enabled" notes pop-up automatically; "Disabled" notes require positive action to be viewed. Show Visible Notes displays all notes present in a screen.

Window notes are associated with the name of a document. This is the only method for attaching notes to graphics. (A normal note cannot be attached to a portion of a graphic.)

Time Notes, connected to a particular date and time, appear automatically (if *Comment* is loaded) and can be made to recur at predetermined intervals. Time notes will pop-up even when the Mac is busy. I arranged for a note to arrive while loading a document. Both appeared without incident. Although a "popping" Time note will interrupt the creation of another note, the partially created notes are saved and may be subsequently completed. Unfortunately, *Comment* lets you create notes for times that have already passed. But, interestingly, the *Note Manager* does warn you if you attempt to change a note's attachment point to a time gone by. Scratch notes, not attached to anything, are similar to those created with the standard *NotePad* DA.

HIGH LEVEL COMMENTS

The *Note Manager* lists each note by type and name. (Notes are automatically named by attachment point.) Since multiple notes can be attached to any location, the first few words of the note are also displayed for differentiation. All notes are retained in the *Note Manager* (even if an attachment point is deleted) until they are actively removed. Icons, arrayed across the top of the *Note Manager* window, let you open, enable, disable, import, export, duplicate, delete and change the point of attachment of any note.

The *Note Manager* can also come in handy in tight situations. For example, if you run short of disk space, *Comment* warns you, with an ominous "error message" dialog, that it cannot save your notes. The note is produced nonetheless, and it remains accessible until you quit the application. By letting you export notes to other Note Files, the *Note Manager* provides a remedy.

However, remember to rescue your notes before exiting your application. At quitting time, the message is displayed again but, in this case the message is not ominous enough. You have no recourse but to click OK, consigning your unsaved notes to oblivion. A final warning, in time to prevent the destruction of unsaved notes, is critically needed.

Another Look

When I Quick Clicked *Memorandum* several months ago, I said it worked pretty well—and with some programs, it does. But I also said it was quirky, and it is. This program takes some getting used to. It just doesn't seem to work the same way every time or with every application. And Note Files are too fragile. They aren't stable enough, although they're improving.

DAs are supposed to be convenient, not cause trouble. Most users would rather spend their time doing purposeful work, not recovering from glitches. DAs ought to be solid and transparent. However, this one can keep you off balance, sapping your confidence and undermining your trust. I originally rated *Memorandum*, which is now *Comment*, at 4 to 4½ mice. Further use now leads me to subtract a mouse and rate it at between 3 and 3½ rodents.

I like the idea of *Comment* and think it has the potential to be a good and useful program. The most needed improvement can be summarized in one word: stability. Back then, I said *Comment* might begin to seem indispensable. If it can be made to behave equally well with all applications and under all conditions, the next version could fully vindicate my first impression.

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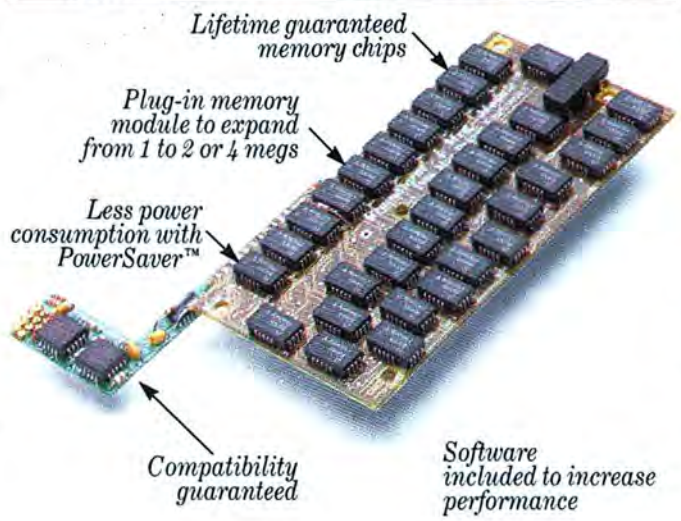
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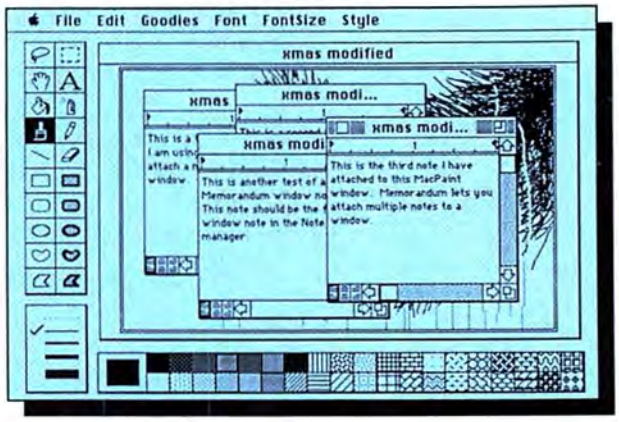


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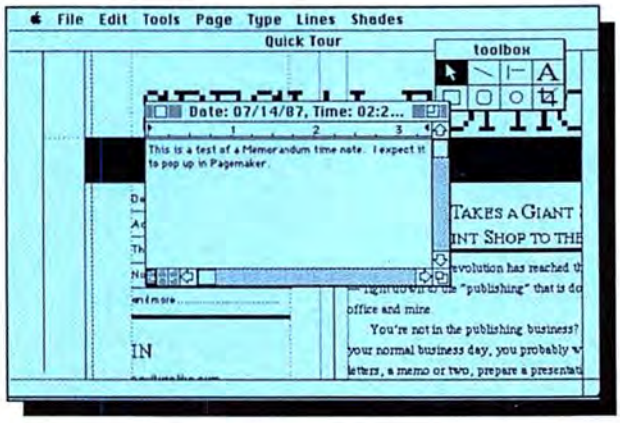
Also the *Note Manager* may be used to recover damaged files. Notes that cannot be loaded can sometimes be imported and merged with another Note File.

The *Note Manager* handles import/export functions well enough, but some feedback would be useful. It is not entirely obvious, for instance, that exported notes have actually reached a safe haven. Dialogs updating the status of these functions would be especially welcome when trying to save or rescue notes.

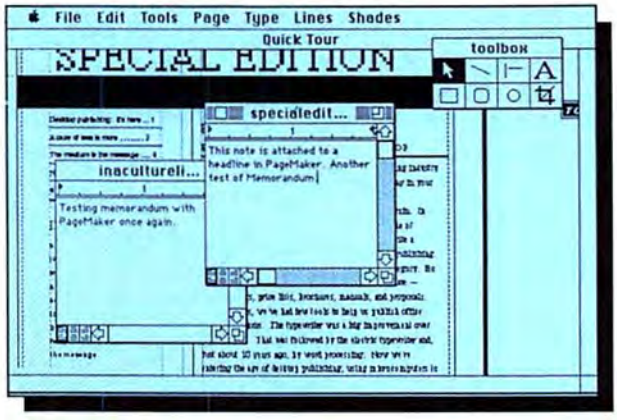
Useful as it is, the Walking Fingers function is not without its peculiarities.



Graphics may be annotated with Window Notes. These have been attached to a *MacPaint* document.



Time Notes pop up automatically when their time has come. They can also be made to appear at regular intervals.



Notes attached to a *PageMaker* document. The note at the left is attached to a block of text; the one at the right to the headline. Each is named according to its location.

IT WAS HERE A MINUTE AGO...

The *Note Manager* also can search for specific notes by keyword. Searches conducted with the Walking Fingers icon match the appearance of a character-string wherever it occurs.

Useful as it is, Walking Fingers is not without its peculiarities. First, searches can be conducted only when the *Note Manager* window is active. When a note is found, it appears in front of the *Note Manager* and Command key shortcuts will no longer work. To resume the search, the *Note Manager* must be returned to the fore.

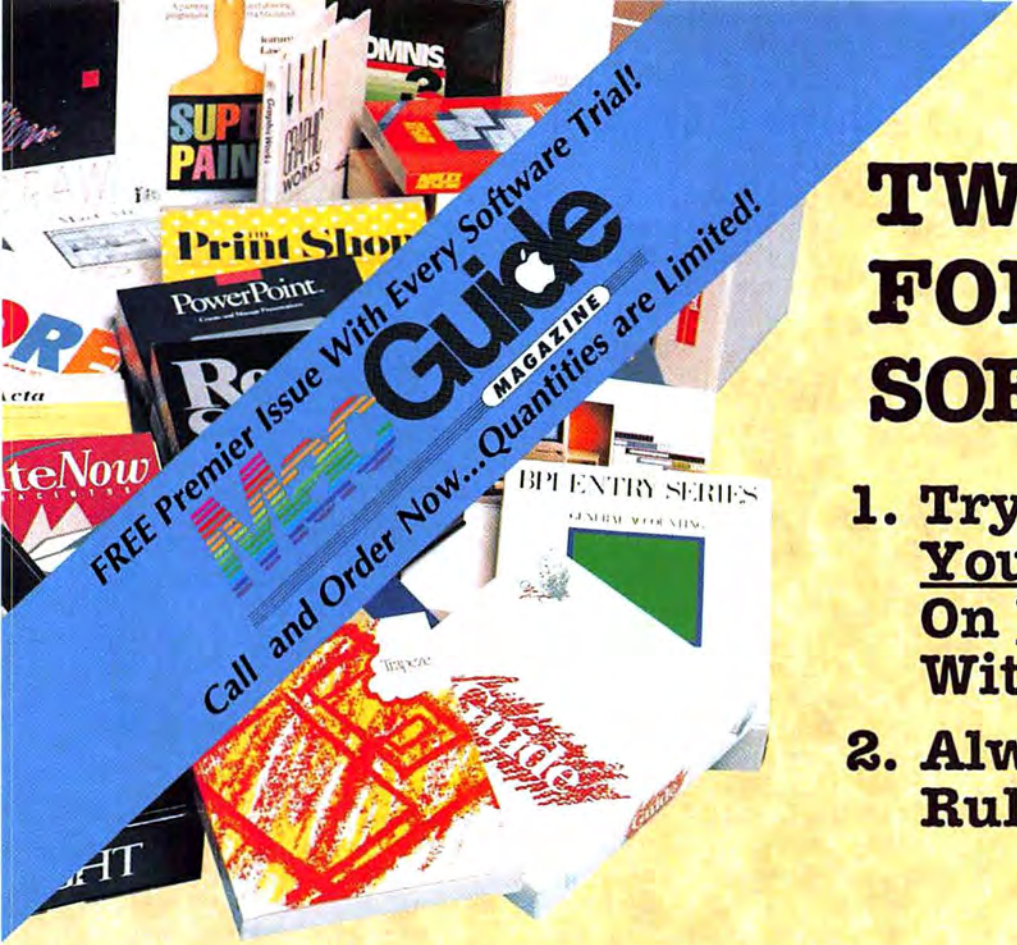
Also, to examine all notes, the search must begin at the top of the list. Start at the middle of the pack, and Walking Fingers will not recycle to the top to continue a search. Keep in mind as well that searches resumed from the keyboard always begin with the next note down.

And because Walking Fingers looks for the first reference to a keyword wherever it finds it, searches can be incomplete. For instance, if your keyword is included in the name of the document, or of the note, Walking Fingers finds, and stops at, that reference in the *Note Manager* window. The note itself is not opened, even if the keyword exists within it. Of course, clicking the Open icon will display the note, but resuming the search with COMMAND-A just sends Walking Fingers to the next note.

COMMENTS ON DOCUMENTATION

The *Comment* manual is a mixed bag. Installation procedures are lucidly described and covered in clear detail. However, the separate tutorials for spreadsheet and word processor users are redundant. One tutorial, referring to the points of difference (there aren't that many), would be an improvement.

Then, there are holes. The export feature is discussed but its importance in saving notes when you run out of disk space is not covered. Also, the *CommentLoader* and the details of the Search feature could



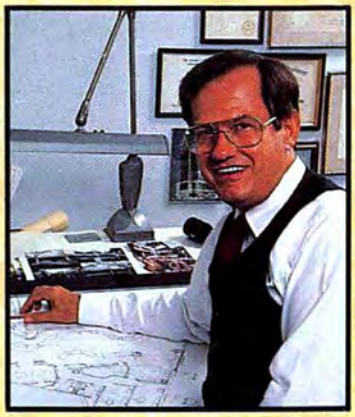
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In a Manner of Speaking

have been better explained. A compilation of error messages would be useful as well. Finally, I discovered that the definitions in the Quick Reference Guide for the COMMAND-A and COMMAND-F sequences are incorrect. COMMAND-F (not A) opens the *Note Manager* Search window. COMMAND-A resumes a Search based on the current criterion.

HOW DOES IT WORK?

The manual claims that *Comment* should have no difficulties working with programs that follow Apple guidelines. I tested *Comment* with *Excel, WriteNow, MacWrite, SuperPaint, MacPaint, Works* and *PageMaker*. Indeed, it worked with all of them, but with varying degrees of competence and not altogether without difficulties.

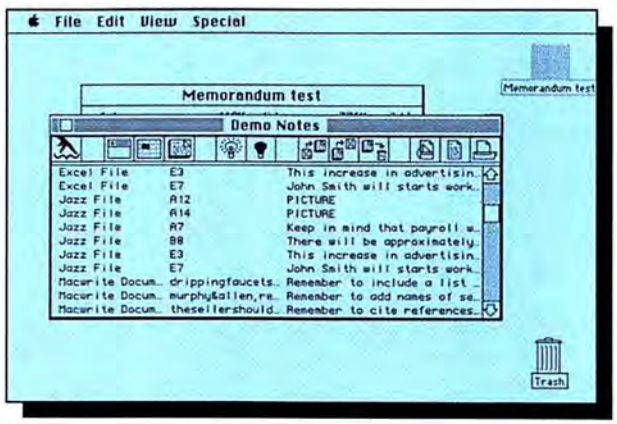
When installed in congenial surroundings, *Comment* behaves itself pretty well. Since Notes are memory resident, access is virtually instantaneous. Response to commands is crisp, either from the keyboard or with menu selections. I have heard reports of difficulties with menu commands and with *Note Manager* access but I could not duplicate them during my testing.

Even in the best of circumstances, however, some conflicts, such as those created by duplicated Command key sequences, are possible. For example, searching with COMMAND-A may be disabled if the application uses this sequence. Or (very commonly) COMMAND-P (Print) will be intercepted by the DA. In such cases, using the menu commands are the only alternatives.

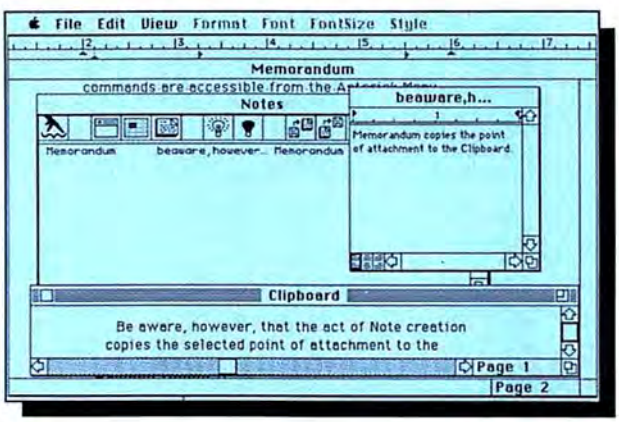
Of the applications I sampled, *Comment* worked best with *Excel* and *WriteNow*. However, it also behaved itself reasonably well with *MacPaint* and *MacWrite*.

WORKS DOESN'T

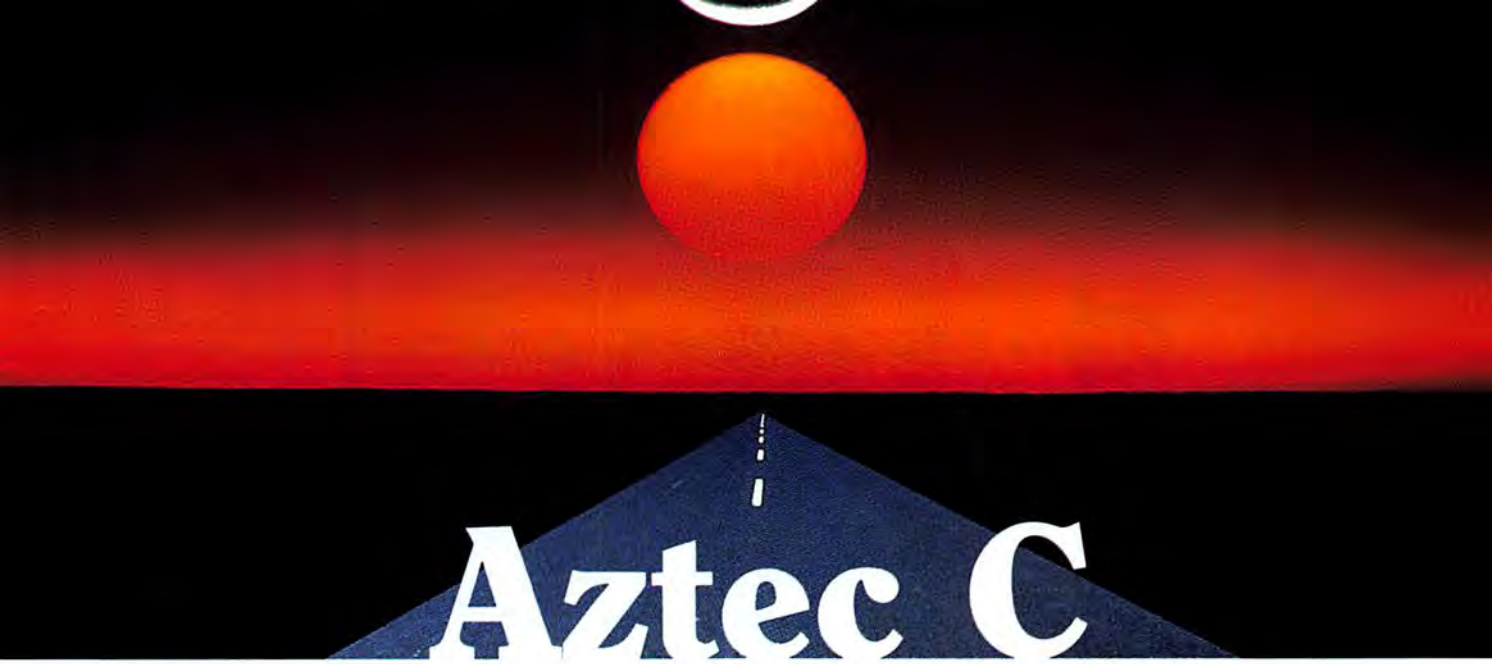
Microsoft Works presents its own set of problems. Notes attached to cells in the *Works* spreadsheet do not travel well. If you relocate the contents of a cell, the attached note is left behind. This problem is duly noted in the manual and can be



The *Note Manager* provides a central clearinghouse for notes. The Document Name, the name of the Note (location) and the first words of the Note are displayed from left to right. Graphic Notes are simply labeled Picture. *Note Manager* functions are controlled by the Icons above the list of Notes.



***Comment* copies any block of text used as an attachment point to the Clipboard. Thus, care is needed when creating Notes and cutting and pasting within your application. This Note is attached to text in *WriteNow*.**



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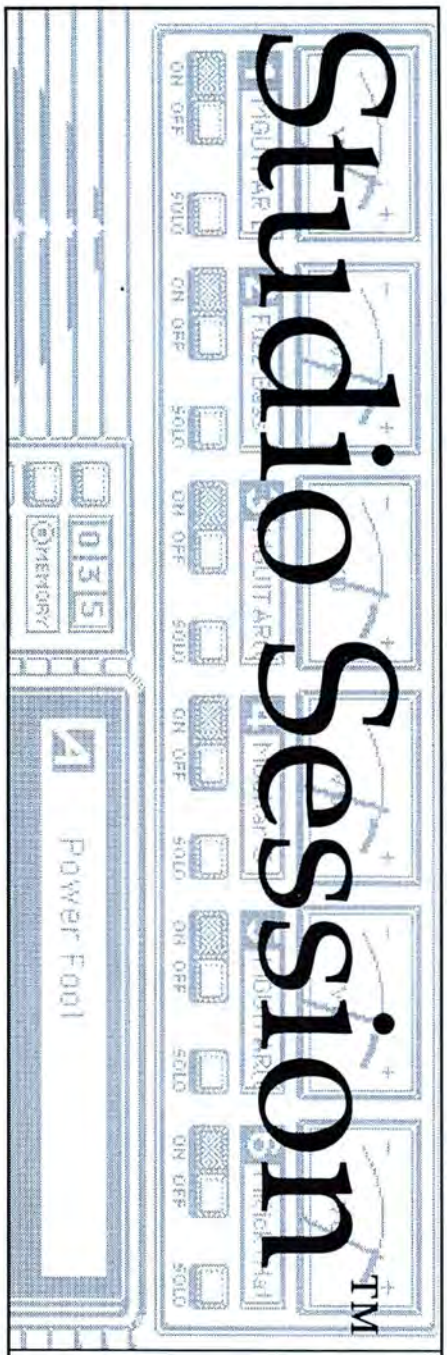
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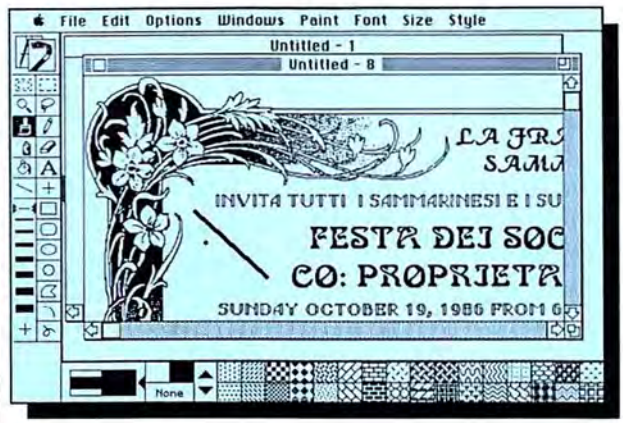
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In a Manner of Speaking



Comment **does not feel at home with all applications. It is especially uncomfortable with *SuperPaint*. Window Notes cannot be attached and tool functions are impaired. The brushstroke on this document was produced by a single click. The dot below it shows what should have occurred.**

circumvented by changing the attachment point of the note in question in the *Note Manager*.

Unfortunately, other problems are not so easily solved. When you close a document or travel from one module of *Works* to another, the program returns you to its unique *MiniFinder*, disabling all desk accessories. Selecting the *Comment* (*) menu from there will cause the system to crash. During testing, this damaged the Note File. When I rebooted, I received an UNABLE TO LOAD NOTES error message. I was able to recover the damaged Notes but I was forced to use a different, more stable *Comment* configuration.

AND IT'S NOT ALONE

I couldn't duplicate a number of problems that have been reported as occurring with *PageMaker*. The new version of *Comment* handles *PageMaker* 2.0 much better. Of all the applications I tested, *SuperPaint* handled the intrusion worst of all. Incompatibilities were such that *Comment* could not read document names to attach Window Notes. System crashes, at times resulting from simple actions like selecting a tool, were unforeseeable and frequent. And *Comment* even disturbed the normal operation of the program. The first click of a tool caused its action to be performed diagonally across a portion of the screen. These false-starts can be Undone, but the potential to wreck an image exists.

NOTE BENE

If you use *Comment* under stable conditions you may wonder what all the fuss is about. But, obviously, the program copes with some applications better than others. New software should always be tested on back-ups until you are satisfied with its stability. With *Comment,* this seems especially important. And, of course, if important annotations are in your Notes, conscientious backing up of Note Files will help your peace of mind.

Experience demonstrates that bulletproof programs are few and far between. And *Comment*, even in its less than perfect state, is a useful tool. In fact, if you need to annotate your documents, it is currently the only game in town. So, even though *Comment* does keep you on your toes, use it with care and prudence, and you may still come to like it for what it can do.

CARLOS DOMINGO MARTINEZ IS A REGULAR CONTRIBUTOR TO *MACUSER*. ALTHOUGH HE'S BEEN KNOWN TO TRASH A FILE ON OCCASION, HE HAS NEVER SHREDDED A DOCUMENT.

MACUSER RATING

Comment ★★★½

Follows Mac Interface	■ ■ ■ ■ ■
Documentation	■ ■ ■ □ □
On-Screen Help	None
Performance	■ ■ ■ □ □
Support	■ ■ ■ ■ □
Consumer Value	■ ■ ■ ◪ □

Comments: A good idea, not yet fully realized. **Best Feature:** The *Note Manager*. **Worst Feature:** Lack of stability; is not consistently reliable with all programs. **List Price:** $99.95. Published by Deneba Systems, 14206 S.W. 136th St., Miami, Florida 33186. (800) 622-5483. Not copy protected.



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The Spirit of Boston '87

A show report on the biggest and best Mac Expo.

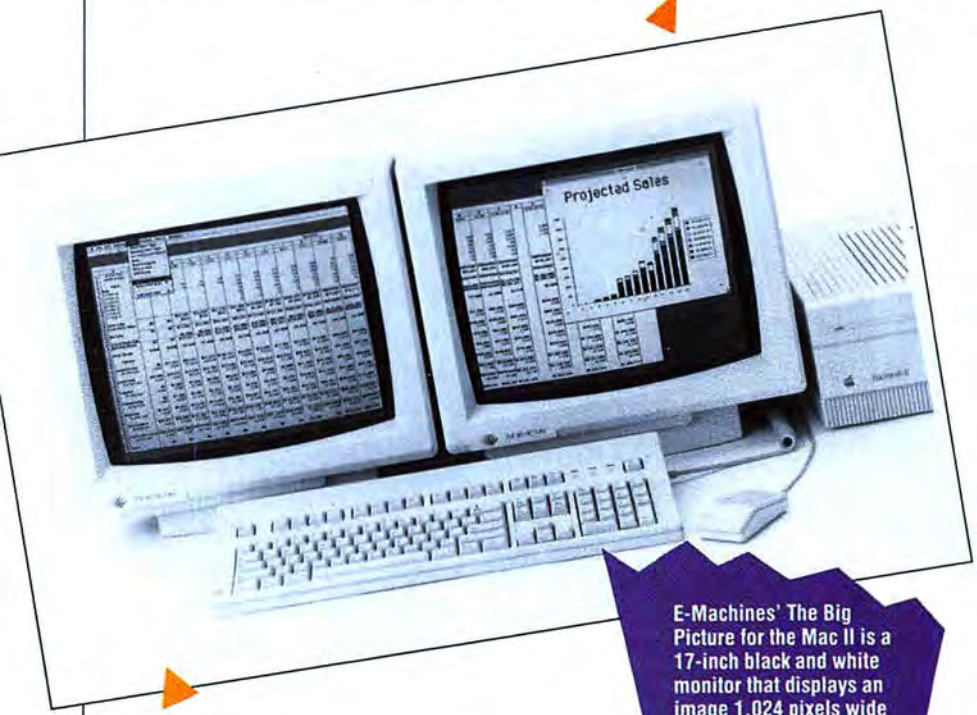
AUGUST 11–13, BOSTON, MASSACHUSETTS. The recent Mac Expo broke all sorts of records. Held in the middle of the week in a large Boston show hall, it attracted record numbers of displays and crowds. The hall was a few minutes south of the center of Boston and ordinarily a short ride away. But so many people came that police were forced to close the nearest expressway exit on several occasions as traffic backed up from the entrance of the parking lot to the not particularly close freeway.

What brought the record crowd—the promoters claimed 40,000 for the 3 days of the show—to Boston was a slew of product announcements and introductions, including Apple's release of Bill Atkinson's long-awaited *HyperCard*. What they found was enough to keep them fully occupied for the whole time.

Anyone attending the show got an immediate chance to use *HyperCard* since the hall was scattered with Macs running a special show information *HyperCard* stack (or program). Surprisingly enough these information Macs were sparsely used and anyone wishing to really see *HyperCard* in action could.

The show was billed as a business trade show, a place for business people to get acquainted with the new business-oriented Mac line. And business people turned out in force. They looked, poked, sat through demonstrations both tedious and exciting and attended panels and seminars led by many of the best and brightest in the Mac community.

But it wasn't all business. Indeed, there appeared to be fewer suited people than at previous shows. The ranks were swelled by ordinary Mac users of every age and income bracket. And everyone got quite a show.



E-Machines' The Big Picture for the Mac II is a 17-inch black and white monitor that displays an image 1,024 pixels wide by 808 pixels deep. The Mac II can run up to six monitors at the same time.

FIRST APPLE

Unlike AppleWorld last March, where the Mac II and the SE were introduced, and the San Francisco show in January 1986, where the Mac Plus was introduced, Apple's primary focus here was software. The biggest splash was made by *HyperCard*, the program Bill Atkinson and numerous friends have been working on for years. Apple has elected to describe it this way: "*HyperCard* is a personal toolkit that gives users the power to use, customize and create new information on their Apple Macintosh personal computer. It will be included with all new Macintosh computers starting in August. *HyperCard* will also be available to current Macintosh owners for a suggested retail price of $49."

That's a rather bland description for a product that is as different as any program yet seen, as revolutionary as Atkinson's earlier *MacPaint*. In a word *HyperCard* is a data base. It's unlike any previous data base though. With its multimedia abilities—integrating text, graphics, video, music, voice and animation—it

BY STEVEN BOBKER AND THE EDITORS OF MACUSER

offers new and powerful ways to customize and use information.

The basic *HyperCard* file is called a stack and consists of "cards." Since the program has an English-based scripting or programming language built in, ordinary users should be able to customize existing stacks and create their own stacks. Apple has been aggressively promoting stack development in their developer community and a few stacks were available at the show. More were announced and by the time you read this your dealers shelves and favorite bulletin board should be awash with stackware, Apple's term for these *HyperCard* templates.

Among the more interesting stacks announced were *PhoneNET HyperCommand* from Farallon Computing, which will allow a network administrator to manage, maintain and optimize multi-building AppleTalk/EtherTalk networks from a single central office and Xiphias' *Timetable of Science and Innovation,* which will be an interactive compendium of the key events in the history of science and human innovation. The information will be richly interlinked via key word and hypertext (click on the word for information and links) techniques.

Copies of *HyperCard* were available at the show for the press and those lucky enough to run into Apple employees who had some to give out. Over 3,000 copies of *HyperCard* were distributed in the 3 days of the show. Over a thousand copies of a special disk of stacks prepared by Bill Atkinson were also given out. *MacUser*'s review of the production version of *HyperCard* will appear in next month's issue.

Apple File Exchange software announced at the show is already available at press time. It translates documents created by one program into the format required by another application. *Apple File Exchange* will be included as part of the System software provided with Mac as soon as it's released. Current Mac owners will be able to purchase it as part of a System Software Update. (These might not be free anymore—the jury at Apple was still out on that one at press time.)



The popular Jasmine Direct Drive 80 packs a lot of storage into a very small space.

Apple also announced—for late September, early October delivery—its first multitasking operating system, to be called *MultiFinder.* This is the program formerly known and much discussed as *Juggler.* As soon as it's released it will be included with all Macs sold. If you already have your Mac, it'll cost $49 (suggested retail). This *Switcher*-like program will require *Finder* 6.0 which will be released at the same time (or sooner).

Announced but not available until the last quarter of this year (which hopefully means this year):

The ImageWriter LQ, a 21-pin letter-quality, wide carriage dot matrix printer with color capability. It can print at up to 216 dots-per-inch resolution, making it nearly as good as the LaserWriter, which prints at 300 dpi. Its suggested price is $1399 and the following accessories will be available: a sheet feeder for $299, additional paper bins for $169 and an envelope feed for $49.

The AppleFax Modem, with a suggested price of $699, is a modem that lets users connect directly to facsimile (fax) machines.

The EtherTalk Interface card, also pegged at a suggested $699, allows the Mac II to connect directly to existing EtherNet networks. EtherNet is the most common local area network protocol.

Due in early 1988 is *AppleShare PC* software, designed to be used with the AppleTalk PC Card. It will let MS-DOS PCs share information stored in an *AppleShare* file server.

THE HARD STUFF

There was lots of new and exciting hardware in evidence wherever you turned. But there was less than expected. This was supposed to be the Mac hardware show. There were supposed to be scads of boards, both for the SE and the II. This influx of hardware was what was going to propel the Mac solidly into the world of business. And it didn't happen.

Much of the hardware shown was in prototype or even announcement form. And the really big crowds were still at the software booths. Still, your average hardware freak had plenty to look at, play with and lust after.

The most exciting item was Levco's Transputer board for the Mac II. This board allows the Mac II to do very high speed parallel processing. We're talking mainframe speed here, fast mainframe speed. The prototype unit shown was drawing fractal type images, in color, on a 19-inch monitor at incredible speeds. This one had crowds gaping all day.

Transputer boards aren't for everyone. Back in the more practical realm of big screens, both color and black and white, abounded. Among the most impressive were the color monitors from SuperMac and PCPC. High resolution black and white monitors from Sigma and E-

The Spirit of Boston '87

Machines were also crowd pleasers.

Accelerator boards to add 68020 and 68881 (and 68851) power and speed to the SE and Mac Plus were shown by GCC, Radius (for both the Plus and SE), Levco (whose buyout by SuperMac's parent, SMS, was announced on the first day of the show), Peak and others. This issue features a review of the Levco board for the SE, and we'll be covering all of them in upcoming issues. The MacUser Labs are also preparing a comprehensive report on these popular add-ons.

Alternative (to the mouse) input devices continued to show up (and sell out). The most impressive was Kensington's ADB Turbo Mouse, an ADB-compatible version of their very popular Turbo Mouse trackball. Other devices attracting crowds were Lightgate's Felix puck controller and the Personal Writer tablet (a pen and pad combined with optical character recognition software).

A neat and hard to categorize device for getting your Mac II and any size monitor off your desktop was being shown by Ergotron. This is the best solution so far for those who have desks originally configured for Macs, but who now have Mac IIs using up too much space.

General Computer was showing prototypes of its new Personal Laser Printer, a $2599 printer that attaches to a SCSI port and uses QuickDraw rather than PostScript. It weighs in at about 36 pounds and seems both solid and impressive. It certainly attracted admiring crowds. Another option is to get Orange Micro's new *Printer Grappler* interface. With that $100 unit and a cheap Okidata laser printer (a printer with a current street price of $1300 and the basis of General's more talented printer) you can do almost everything the GCC unit can do. The laser printer market is getting very complex.

The Laser Connection showed several new laser printers including some designed for a much higher number of copies per month than the Canon-engine-based units like Apple's LaserWriter.

They also had available two very efficient and reasonably priced paper feeders that will let busy offices avoid the LaserWriter's all too frequent "out of paper" alert.

The hard disk field was as crowded as ever. Very large hard disks (150 megabytes and up—way up—) were shown by several venders. We were particularly impressed by offerings from Peripheral Land, PCPC, NuData and Mirror Technology. SuperMac pleased their many fans (they make DataFrames) by announcing new technology that will mean increased speed and capacity. Their basic unit is now a 30-megabyte drive (a 50 percent increase in capacity). The 40-megabyte units are now 60-megabytes and so on. We'll be reviewing both the very large drives and SuperMac's new designs in the next few issues.

If you travel with your Mac and plan to telecommunicate while on the road, check out Migent's tiny Pocket Modem (recently reviewed in *MacUser*). It's light, small, cheap and works well. Could you ask for more?

Presentation graphics can be created entirely with software, but corporate users often prefer a more traditional approach that combines hardware slide and foil makers and software. We were very impressed with Presentation Technologies ImageMaker slide creator package.

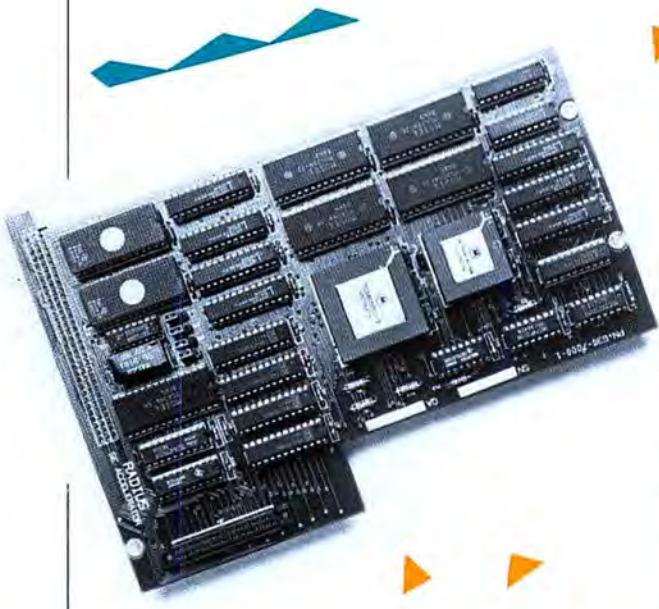
Added memory still seems to be the province of Dove Computer, although Peak Systems is now also selling the coveted 1-megabyte SIMMs.

It seems that some manufacturers read Doug Clapp's column about optical character recognition. Both DEST and DataCopy have practical working or nearly working products. And Olduvai Software has a program, *Read-It!*, that converts almost every 300-dpi scanner (that's most of the market) into a fairly good OCR device.

ON THE SOFT SIDE

The software that wasn't at Boston was at least as significant as what was there. The amount of unfinished software being shown was staggering. And while it's nice to see what's coming, such a profusion of unreleased software hurts the market. Some of these programs have been talked about, shown and promised for over a year now!

Word processors were well-represented in both the "here now" and "here later" categories. Microsoft had a fixed, but still imperfect version, of *Word* 3.0, which is now *Word* 3.01. T/Maker's *WriteNow* continued to attract crowds, and Firebird was offering a much improved version 1.1 of *Laser Author*.



This is what an SE accelerator board looks like from the top. The big square chip in the center of this Radius product is the 68020 and the smaller square chip is the 16-megahertz 68881 coprocessor (really!). The rows of holes at the top left are the MagicBus built-in expansion connector; it allows you to add further boards or equipment (if you can find the room!).

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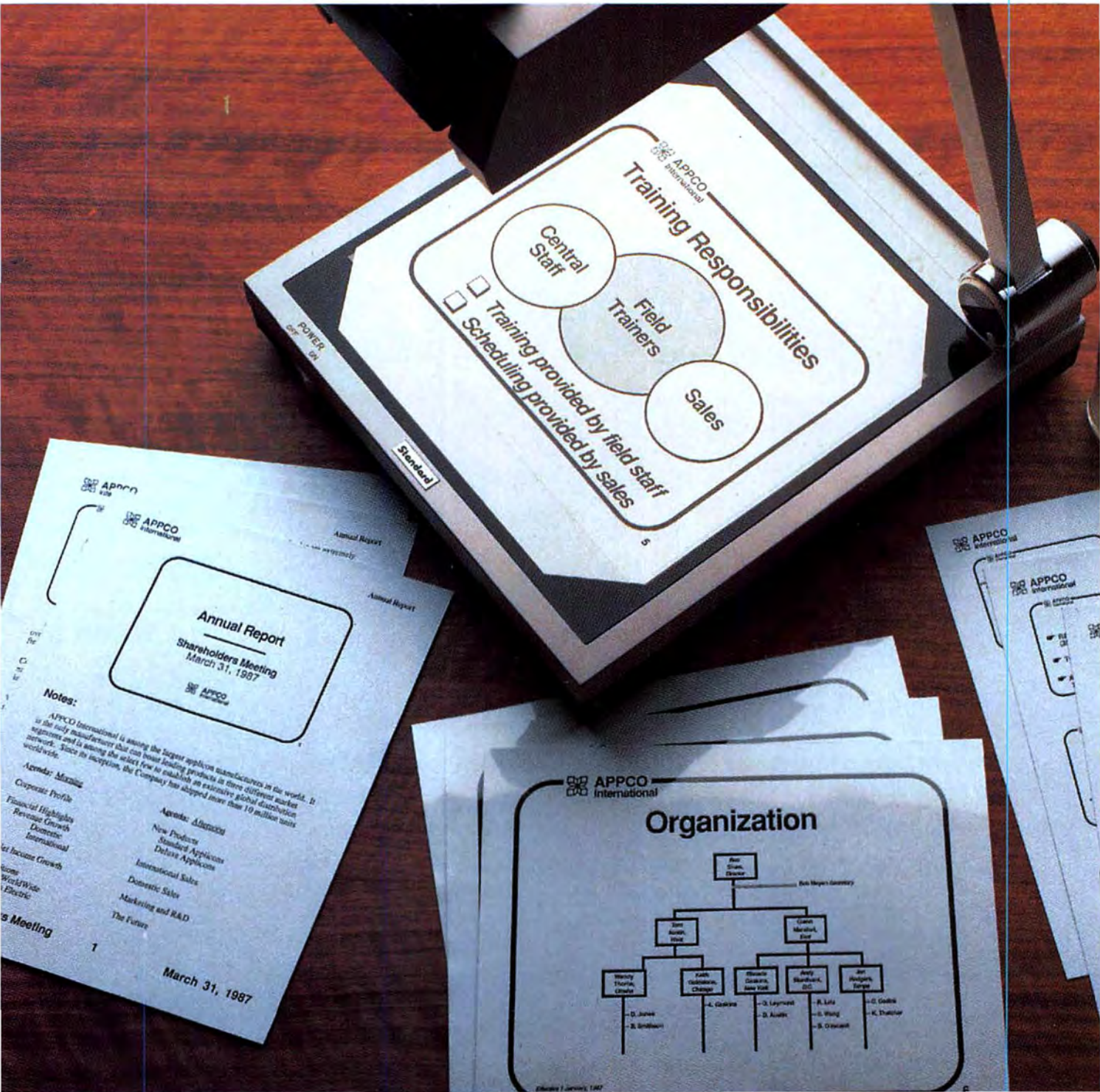
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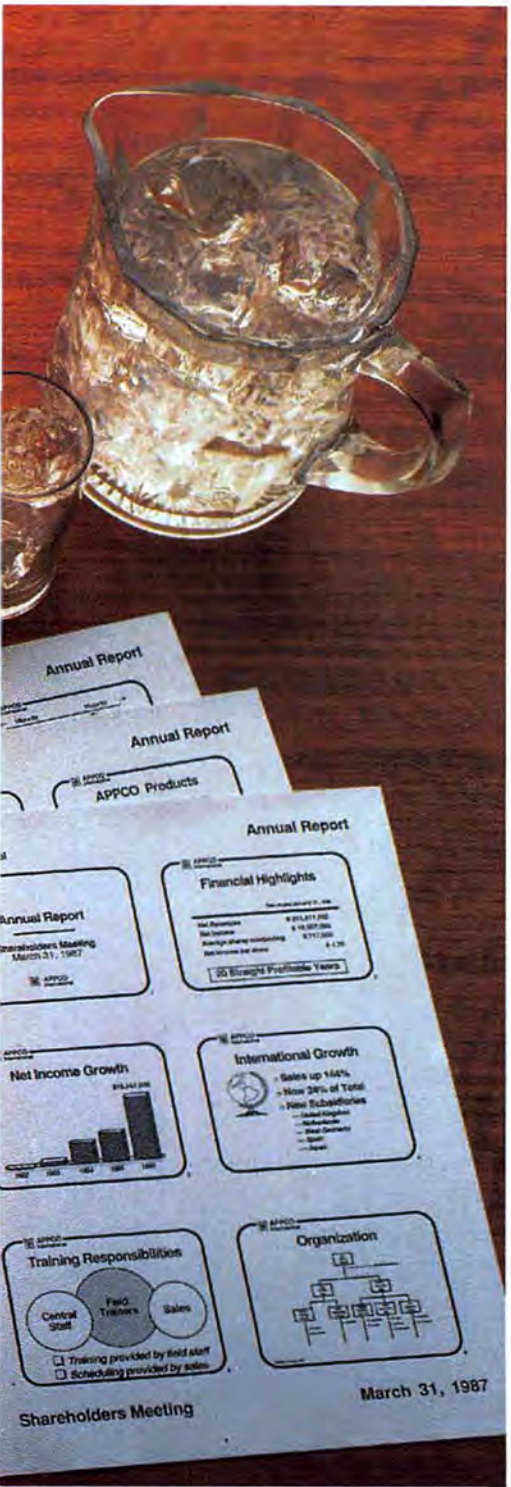
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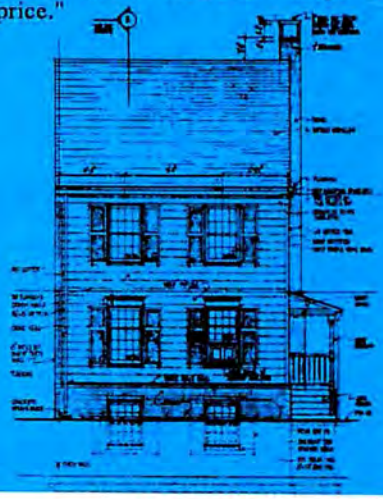
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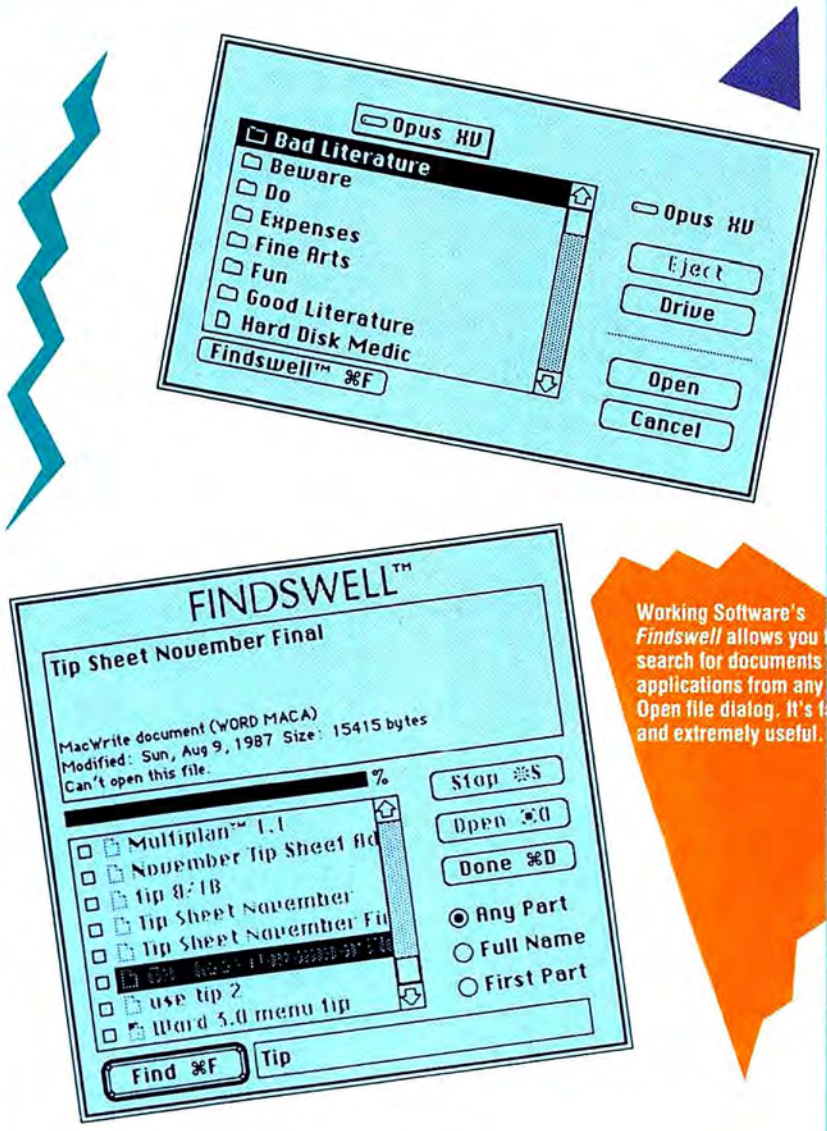
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The coming "soon" category included Paragon Concepts *In a Word*, a truly stunning program based on their popular *QUED* and *QUED/M* editors (this one is due in the fall); *WordPerfect*, with one of the nicest feature sets of any word processor we've seen so far (not yet in beta, but due this year) and the most anticipated of all, Ann Arbor's *FullWrite Professional*, which should be out as you read this and should certainly be carefully looked at by anyone requiring a high-level, full-featured word processor. And MindWorks was privately showing version 1.1 of their excellent *MindWrite*. Your choices in word processors are not going to get any easier.

The introduction of *HyperCard* put somewhat of a damper on the data base market. And *dBase Mac* (from Ashton-Tate) still isn't finished. Acius' *4th Dimension* did manage to draw big crowds and *RecordHolder Plus* also interested many people. The crowds were also good at the Nantucket Software booth where they were showing their *dBase*-like *MacMax*. And Odesta's latest *Helix* variant, *Double Helix* 2.0 should be out by now. It's slick and a major enhancement to an already popular product. Its Post feature should allow the creation of some really good accounting packages.

In the accounting arena, Layered introduced *OneWrite* and *All-in-One*, two new standalone ledger programs for small businesses.



Lotus was showing early versions of *Galaxy*, a program good enough now to make you forget *Jazz*. It should also be out by the end of the year. Microsoft announced and should have released by the time you read this version 1.1 of *Works*, with significant improvements to the most popular integrated program on the Mac.

Presentation software seems to be still in a holding pattern as users can't decide between hardware and software solutions or all software solutions. The biggest news was the acquisition of *PowerPoint* by Microsoft (they bought Forethought, its publisher). It's now called *Microsoft PowerPoint*, a nicety that Microsoft's attorneys insist upon and our candidate for the silliest software name at Boston. Don't be put off by the name though; it's still the same fine program it was. (By the way, Forethought's other major program, *FileMaker Plus*, was not acquired by Microsoft in the deal and will now be sold by its original developers, Nashoba Systems.)

Some of these programs have been talked about, shown and promised for over a year now!

Programming languages were pretty much eclipsed by *HyperCard*. Right now, the hot Mac programming environment is *HyperTalk*, *HyperCard*'s built-in programming language. But it's not the only way to go.

That was shown by the continuing interest in Think's *Lightspeed C* and *Pascal* and Zedcor's release of a major upgrade (version 4.0) of their popular *ZBasic*. The latest release of Apple's *MPW* wasn't quite ready, but that product is still holding its own also.

Lots of new graphics programs

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appeared, many specifically designed to take advantage of the color capabilities of the Mac II. We didn't see any that could be considered really finished or bug-free, although some were much closer to that exalted goal than others. And the long-awaited version 2.0 of Apple's basic graphics programs, *MacDraw* and *MacPaint*, still were no-shows. Both programs have been fixed to work with the Mac II, but new functionality was added.

We were impressed by the capabilities and possibilities of SuperMac's *PixelPaint*, LaserWare's *LaserPaint*, Silicon Beach's *Super 3D* and Letraset's *Image Studio* (aka *Realist*, aka *Gray Paint*). In the black and white graphics field keep a lookout for Deneba's *Canvas* and ABA Software's *Draw It Again Sam*....

Page layout programs continued to evolve. Aldus is still clearly alone at the top of the heap. They were showing *PageMaker* 2.0a and many sophisticated and effective new training tools. Letraset showed early, but working, versions of *Ready, Set, Go!* 4.0 and Target was showing *Scoop*. Quark *Xpress* also drew big crowds throughout the show.

The most interesting software category (at least judged by the size of crowds and the number of copies we saw being carried around) was utility software. The software hit of the show, by a wide margin, was Software Supply's *Suitcase* (reviewed elsewhere in this issue). This small and slick program installs transparently in your Mac's System folder. Then it easily lets you access all your fonts and DAs at any time. All you need to do is to arrange them in the simple (and quick) way the manual



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suggests. From then on there are (for all practical purposes) no limits on the size of your DA and font menus. This gem sold out each day of the show. Software Supply had additional copies flown in and still could not keep up with the demand.

Their other product, *PowerStation*, did almost as well. This one is a *Finder* replacement and not for everyone. But if you've ever fooled around with Apple's *MiniFinder* or any similar program, you owe it to yourself to check out *PowerStation*. And there's an easy way to try it. You get a free evaluation copy when you buy *Suitcase*, and you should buy *Suitcase*. [*Editor in Chief's note: If you can only buy one program for your Mac in the next year, buy* Suitcase. *It'll do more for you than any other program.*—SB]

Not available at the show, but being shown in what looked like a nearly ready-to-ship form was CE Software's *QuickKeys*, a program that lets you redefine your keyboard in every way imaginable. You're not limited to just reassigning keystrokes, but can create macros that include mouse actions, menu choices and more. And you can group these possibilities to multiply their effect. This program, available as you read this, is a necessary part of the Apple Extended Keyboard, Tangent's keyboard, and DataDesk's really nice keyboard for the Mac II. Figure on getting it if you have one of those. And take a tryout no matter what keyboard you use. We think you'll want *QuickKeys*. There were lots of other utility programs being shown and sold by the public domain purveyors and the user groups who were represented in force as they always are—the strength and influence of the user groups continues to be one of the best things about the Macintosh.

In the hard to categorize category were Satori's improved new versions of their popular professional billing and mail merging programs. These products (*Professional Billing*, *Legal Billing II*, and *Bulk Mailer+*) are clearly designed for professional office use. They're classy.

There were no third-party surprises in communications software. *Red Ryder* 10.0 didn't make it, but is now available and worth a hard look (see the review in this issue). And Hayes announced version 3.0 of *Smartcom*, a long overdue but possibly too limited upgrade.

Lots of new games were announced and shown, proving that all work and no play is still primarily an IBM concept. John Dvorak has authored a game called *Gossip* (what else) that you are sure to need. Well, sure to talk about. And Chris Crawford (of *Balance of Power* fame) has a new stunner called *Trust and Betrayal*. It's from Mindscape as is *Gossip* and both should be available about the time you read this. If the next issue of *MacUser* comes out late, these will be the reasons why.

Lotus showed early versions of Galaxy, a program good enough to make you forget Jazz.

Action game players have not been ignored. They can expect to see by Christmas *Harrier Strike II* from Miles (and shouldn't forget the neglected but wonderful *Downhill Racer*) and *F-16 Falcon* and *PT-109* from Spectrum-Holobyte. And, of course, Silicon Beach will have a sequel called *Beyond Dark Castle*.

HOT OFF THE PRESSES

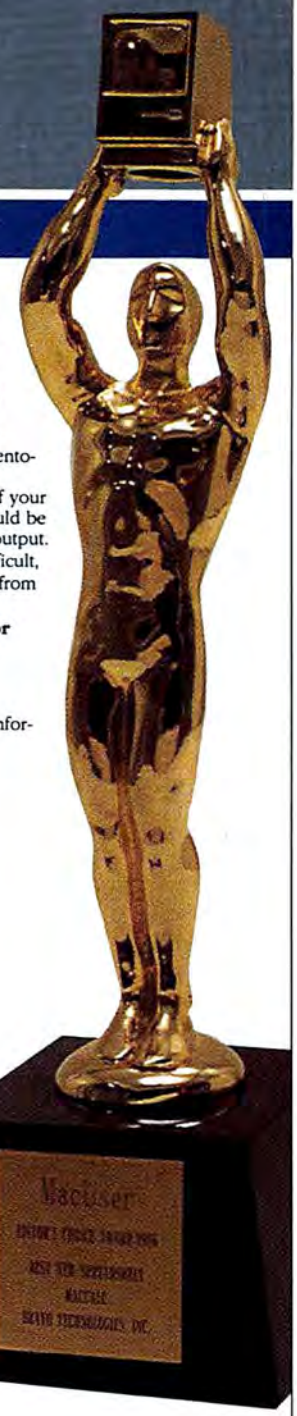
The biggest news was right by the front door, where *Macintosh Today* was distributing their first issue. It was big, over 100 pages long and pretty impressive. Apple was rumored to have lent strong support to the first issue. *Macintosh Today* is starting out as a biweekly.

The first Mac weekly, *Mac Week*, continues to improve editorially, but is still a small paper with a long hard row to hoe.

MacUser, as usual, gave out the biggest, strongest and best bags and lots of free copies. In addition, they

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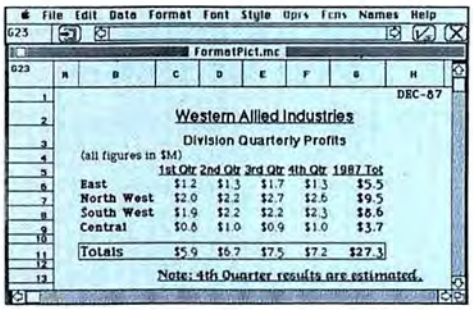
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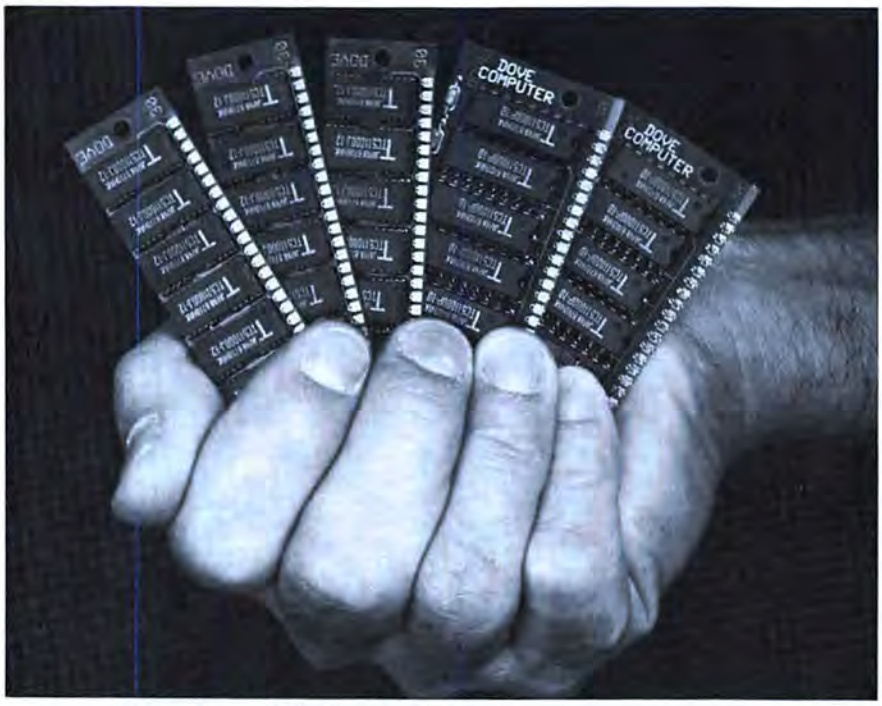
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The Spirit of Boston '87

offered a very popular free service that used a color video camera to take people's pictures. The pictures were then printed out and placed in frames that looked like a *MacUser* cover. If you wanted to see long lines and big crowds, the *MacUser* booth was always the place.

The *MACazine* continues in the fine, super newsletter tradition it has established. Its staff created a demo *HyperCard* stack that easily took honors as Stack of the Show.

The Mac Buyer's Guide continues to be the place to go for unranked listings of products and addresses. The promised *MacGuide* failed to

The software hit of the show, by a wide margin, was Suitcase.

appear except as a booklet of ads and excerpts, so we'll have to reserve judgment on it.

Serious newsletters have finally started to appear; a sure sign that a computer is being accepted in the business world. Newsletters are professional's tools, able to report more quickly and accurately than other media. And you needn't wade through pages and pages of ads to find the information you need. There are already on the market several decent desktop publishing newsletters.

This show brought the announcement of one purely business oriented newsletter and the actual first issue of another. Actually appearing was the *Macintosh Business Letter*, edited by and mostly written by *MacUser*'s own Robert Wiggins. This 12-page fact-packed traditional newsletter looks to be a necessity for corporate buyers and users.

The *Mac Business Journal* was announced and should have its first issue out by now. From the samples on display, this monthly looks more like a magazine than a newsletter, but its list of articles to come and contributors was enticing. We'll be letting you know more about both

these newsletters and any others that appear in future issues. Meanwhile, as the amount of Mac-related reporting seems to be increasing to keep pace with the Mac's stunning sales figures, it's probably time to take that speed reading course you've been putting off.

DEALING IT OUT

These Expos are serious selling shows. At an ordinary trade show you can't buy the products being shown. Here you could buy anything and everything Mac-related. Many of the bigger mail order dealers had booths and all seemed to be doing land office business. The dealer booths were not the most attractive exhibit spaces on the floor, but they were certainly among the busiest.

GO WEST, YOUNG MAC

There was even more than we can report here, much of which we'll cover in the upcoming months. If you didn't see what you were looking for here, that doesn't mean it wasn't at the show.

The very positive trend toward the removal of copy protection continues. Adobe has removed protection from their virtually industry-standard laser printer fonts and, in a deal made on the show floor, Quark agreed to remove copy protection from *Xpress*. The original copy of *Xpress* that you get in the box will still be protected but the backup you'll receive, free, for sending in your registration card will be unprotected. This is the same system Adobe uses with *Illustrator*. As soon as we receive our unprotected copy of *Xpress* we'll give them back the mouse we withheld due to their obnoxious copy protection.

Overall, the show was revealing, exhilarating and somewhat disappointing. While the Mac is clearly becoming the business machine of choice through much of corporate America, the show didn't have the sterile atmosphere that pure business trade shows have. Most of the time it was plain outright exciting. And the promise of the future that was always in the air was wholly positive.

See you in San Francisco.

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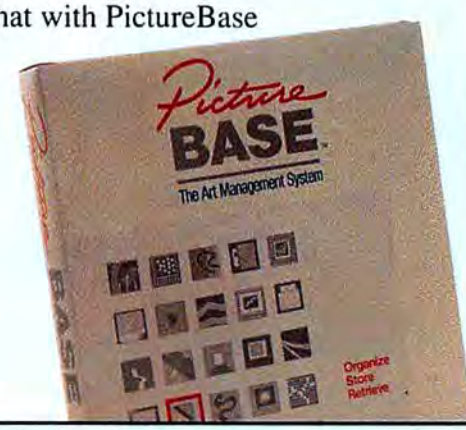
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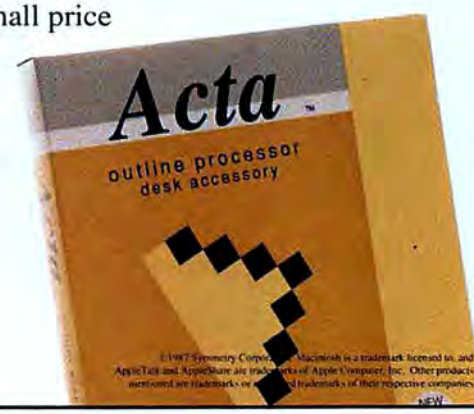
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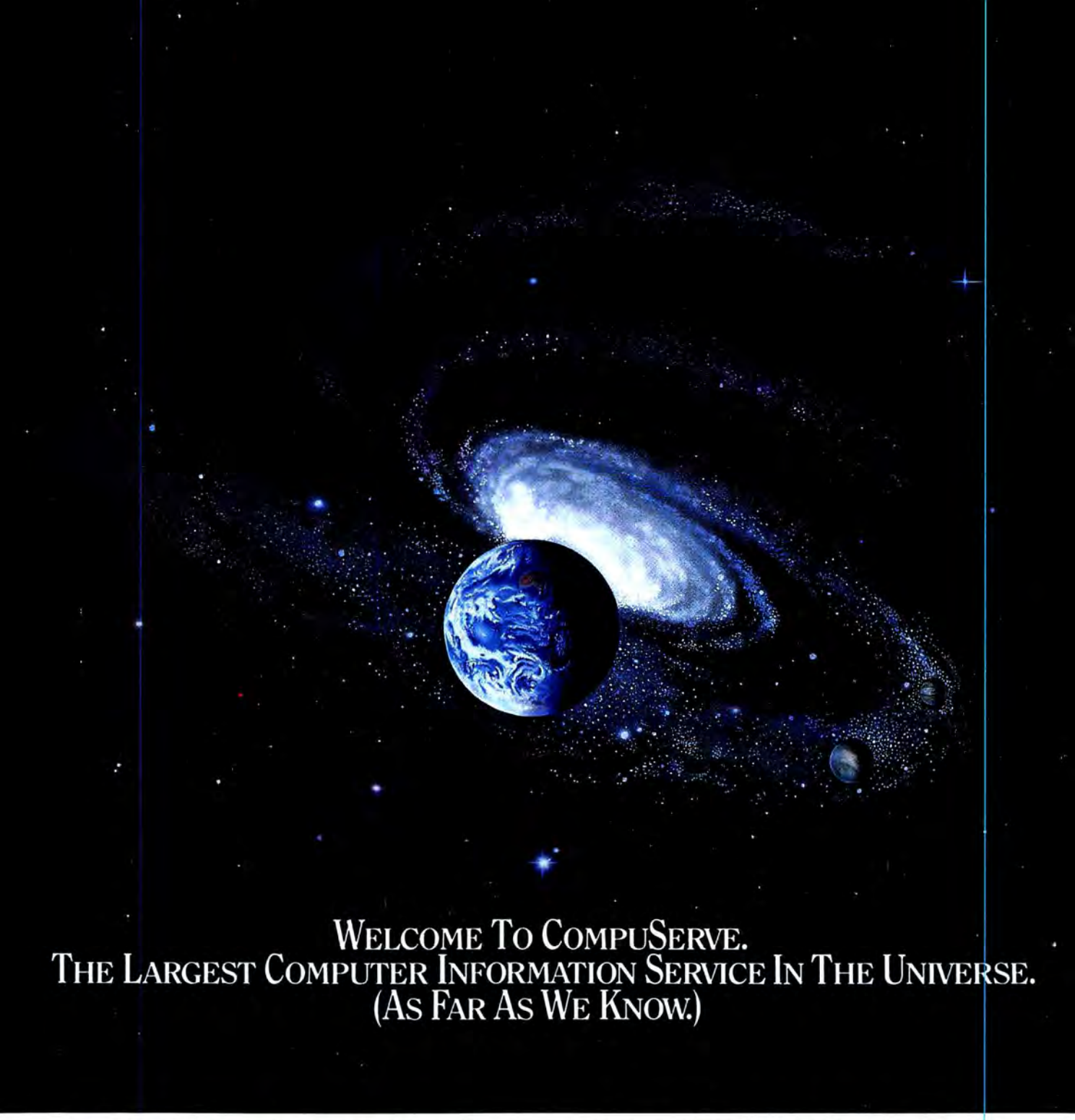
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Then, once all the editing and revisions are complete, the

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by Dan Cochran

Answers From the Mac Team

Got a Mac problem? Something that you'd like explained? Something you can't find the answer for anywhere else? Apple's Dan Cochran will answer your questions every month in this space. When the questions are too tough for him, he'll get the answers from other members of the Mac team. So ask what you need to know and get your answers straight from the source!

Send your questions to Dan care of MacUser, *110 Marsh Dr., Foster City, CA 94404. Dan will read all of your questions, but unfortunately, he may not be able to answer individual queries.*

ABRUPT EXITS

Q. There are many programs, especially games, that perform a shut down when you quit the application. I have installed such programs on a hard disk, and when I quit a program I merely want to return to the *Finder*, but instead find that I have to wait for the hard disk to reboot from scratch.

Is there any way, using such programs as *Fedit* or *ResEdit*, to alter such applications so they will return to the *Finder* when one attempts to quit?

DAVID KELLY
HILLSBOROUGH, CA

A. *The phenomenon you describe is one which all Macintosh users have had to deal with. And there really isn't much you can do about it. The machine instructions that instigate the shut down and reboot are hard-coded into programs. As such you can't easily get at them with* ResEdit. *While a clever programmer might be able to modify some programs with* Fedit, *they'd probably be violating federal copyright laws by doing so. Not a good idea.*

And some games aren't really "well-behaved" programs. When you boot them they will take over the entire machine without any intention of ever having to return to the Finder. *When that happens some* System *resources that are necessary to maintain the state of the* Finder *and the* System *can often be overwritten by the game program itself. Other games might choose to implement a direct shut down as a part of their copy protection policies and procedures. Some of the more enlightened commercial games, like Silicon Beach's* Dark Castle, *don't penalize the hard disk user, nor do they implement copy protection.*

MORE READERS REPLY

In the July issue of MacUser *Lloyd Fowler asked me about the possibilities and desirability of using an ImageWriter to produce mimeograph stencils. I, in turn, asked* MacUser *readers to share any experiences they may have had in such matters. Judging from the volume of mail I received (Lloyd himself even received several phone calls from helpful readers) mimeograph technology is alive and well—and the ImageWriter works like a champ in stencil production. While I don't have the space to print all the letters, here's a summary of the most frequently received comments.*

1. Most readers recommend using stencils that have a protective typing "film" over the stencil. This film will prevent your ribbon, printhead and printer from accumulating the stencil material. The most recommended stencils were A.B. Dick stencil sheets numbers 2060, 1960 and 1160.

2. Printing with the ribbon in place is the most commonly used tactic. The ribbon helps to lubricate the printhead and will help to prevent the printhead from gumming up. Even A.B. Dick emphasizes printing with the ribbon in place.

3. Follow the single sheet feed instructions in the ImageWriter manual. Because of the thickness of the stencil form you may wish to experiment with the paper thickness lever.

4. If you do print without a ribbon, you should occasionally remove the printhead and the metal shield and clean the pin area with alcohol and cotton swabs.

5. Many people report obtaining best results using fonts like Chicago and New York which put more dots per character on the stencil. Others say stick to Sans-serif fonts like Geneva. Everyone agrees that you should avoid large all-black areas on stencils. If you insist on art, stick to simple line drawings and use patterns instead of black.

The camaraderie and cooperation that pervades the Macintosh community never ceases to amaze me. Thanks to Peter Hertz-Ohmes, Marshall Wilen, Robert Hutchinson, Clifford Cain, Sandy Leavelle, Steven Brown, Andrew Gallegos, Susan Rollinson, Roger Mackie, Sue Jane Spaulding, Cherryl Austine, Robert Boufford, Jerry Rasmussen, Harvey Zeidenstein, Keith Gatling, A.R. Jones and Kent Dunn.

Hmmm, maybe an Apple-labeled mimeograph machine would do well in the market!

On another note, In May's MacUser *I talked about available daisywheel printer drivers for the Macintosh. I forgot to mention* Print-Link *from GDT Softworks. They have a driver specifically for the Epson DX-10.*



And one more call for help. Does anyone know of a product or a workaround that will allow Microsoft Word *and daisywheel printer users to stop printing long enough to switch typefaces and printwheels (without having to hit the offline button at precisely the right time or making multiple passes with the same document)?*

STATVIEW MEMORY PROBLEMS

Q. I have a Mac Plus at the office and a Mac 512E at home, each with an external disk drive. I used *StatView 512+* to run a factor analysis on 80 variables (the maximum possible) on the Mac Plus. It ran fine. I then tried to run the same factor analysis on my enhanced 512 and got a message that there was not enough memory. The odd thing is that I used the same disks in both computers. By experimenting I find that the maximum number of variables I can run in my enhanced Mac is 48. Can you explain this?

VICTOR H. DENENBERG
STORRS, CT

A. *Is it possible that you are confusing available memory with available disk space? The Macintosh Plus at your office has twice as much memory as your 512E at home (1024K versus 512K). Therefore it's not illogical to expect the Plus to be able to effectively deal with more data than the 512E.*

The memory requirements for any particular application are a function of the memory requirements of the Macintosh system, the memory requirements of the program itself and the amount of data, text or numbers contained in a specific document. It sounds to me like 48 variables is about the maximum your 512E can handle.

There is one other possibility worth mentioning. Make certain that the RAM cache on your 512E (accessible through the Control Panel*) is turned OFF before you boot*

ANDY MARTIN

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StatView. *RAM cache information is stored in the parameter RAM of the machine itself, not on a specific system disk. If, for instance, the RAM cache setting of your 512E is set to 128K, that's 128K less memory that your* StatView *program has to navigate with.*

B&W TO COLOR?

Q. Will existing programs written in black-and-white for the Macintosh Plus run in color on a color Macintosh II?

MATTHEW MICHALSKI
MONTREAL, QUEBEC

A. *From a programmer's perspective the Macintosh Plus, and even the original Macintosh 128K, had built-in but limited support for color. QuickDraw, the Macintosh Plus Toolbox graphics routines which are ultimately responsible for drawing everything you see on a Macintosh screen, has always supported eight standard colors: black, white, red, green, blue, cyan, magenta and yellow. Color QuickDraw, as implemented on the Macintosh II, provides a much higher level of color support allowing the programmer to select one of 256 colors from a palette of over 16 million.*

Most pre-Macintosh II programs didn't bother to incorporate color support because in the absence of a color machine the exercise seemed fairly pointless. And those programmers that did were only able to see the results of their efforts when the Macintosh II became available! (Living Videotext's MORE *is a good example.)*

With the introduction of the Macintosh II and MultiFinder, *most developers will be releasing major revisions of their programs to support the new functionality and features of these products. This revision cycle will also be an opportune time for them to incorporate color in a judicious manner.*

STARTING UP IN COLOR

Q. I'm desparately looking for a utility that will allow me to do color startup screens on my Macintosh II. I can deal with black-and-white startup screens but can't seem to make a color one. Any ideas?

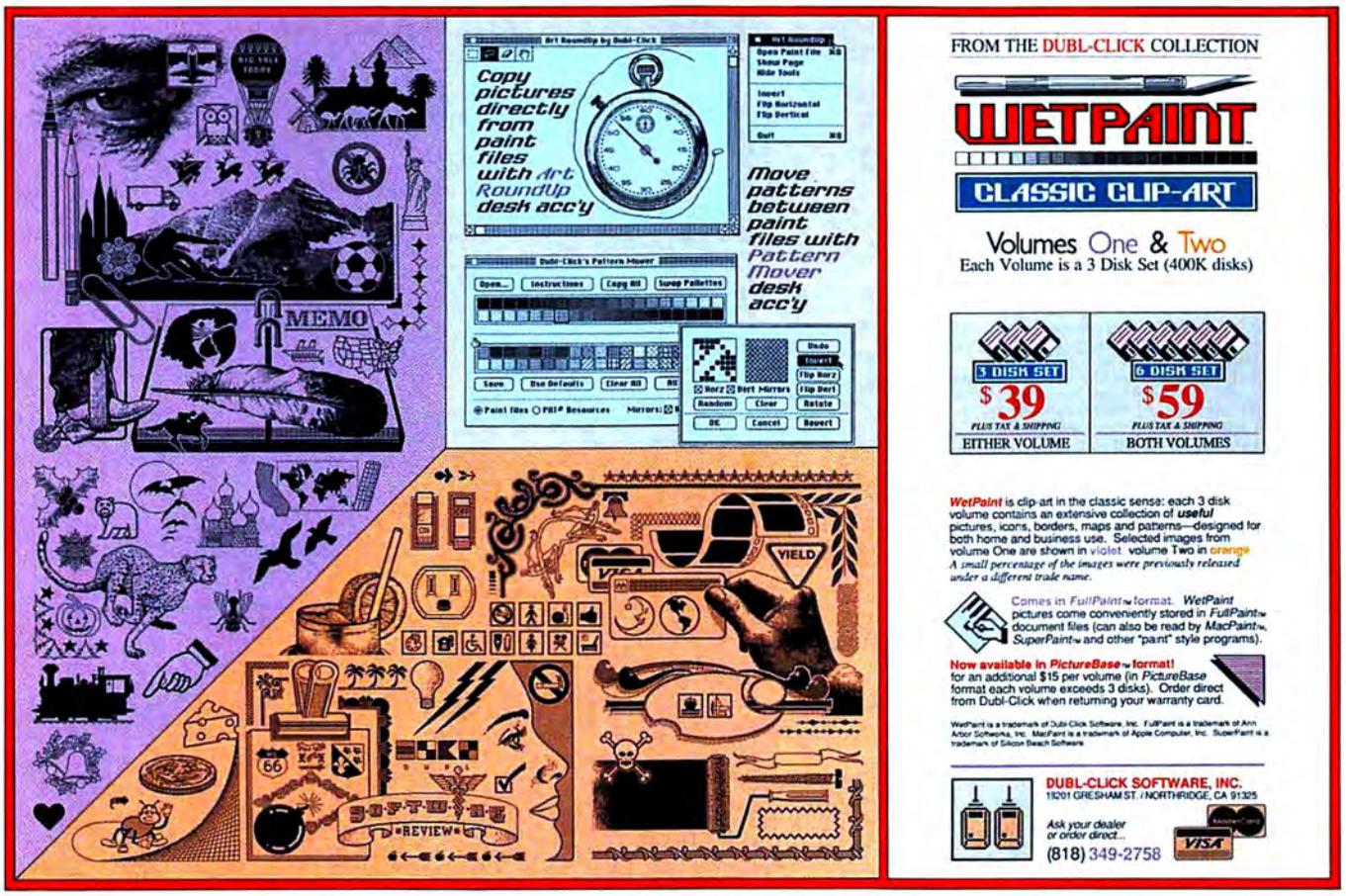
HAROLD AVERY
LINCOLN, NE

A. *According to Larry Rosenstein, a color startup screen can be achieved by placing a PICT resource with an ID=0 in the normal* StartupScreen *file. First, you'll need a color picture. Copy a color picture out of any application and then paste it into the Scrapbook. Now you can use* ResEdit *to find the PICT resource in the Scrapbook file and then paste that resource into the* StartupScreen *file. Finally, use* ResEdit *to do an OPEN GENERAL on the newly pasted PICT resource in* StartupScreen. *Select the new PICT resource you've pasted and choose* GET INFO *from the File menu. You can then change the PICT ID from whatever number it's been assigned to 0.*

By the time you read this, I'll bet that many of the new color paint and drawing programs will allow you to save documents as StartupScreens *— then you can forget this workaround.*

AN EXCESS OF KEYBOARDS (or is 2 too many?)

Q. I have a Macintosh II with both the standard Apple keyboard and an Apple extended keyboard. If I try to switch between these two keyboards during a session the machine usually freezes or bombs. Do you have any suggestions? I'd like to be able to freely



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it any easier to have

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interchange keyboards without having to reboot.
STEVE GORDON
ORINDA, CA

A. *The Macintosh II, Macintosh SE, and Apple IIGS ADB ports won't allow you to swap devices while the computer is running. If you add or remove a device while you are up and running you'll probably end up resetting the ADB chip on the logic board. Even if the system doesn't die a horrible death the new device won't be recognized until you reboot. If you swap keyboards while your computer is running, the extra keys on the Extended Keyboard won't be properly interpreted. Make the switch, bring up the* Key Caps *desk accessory and you'll see what I mean. It's only during system startup that the Macintosh can gather the necessary information about ADB devices. And I don't know of any workarounds.*

WHAT'S A cdev, DAN?

Q. Could you please answer a question that no Apple dealer in my area can? What do the new "cdev" files that come with *System* 4.1 and *Finder* 5.5 do? For example, what do Monitors, Startup Device and Sounds do?

How come Startup Device is shown on my dealer's Macintosh SE (with a built-in 20M hard disk) *Control Panel*, but it does not show up while running on my Macintosh Plus (with its DataFrame 20XP) with the same *Control Panel*? For what System configurations do you need these "cdev" files? Some of these files are taking up valuable space on my hard disk. Can I toss them out?
PETE CHANE

A. *The "cdev" files to which you refer are "mini-controllers" that give users and developers both a much greater level of functionality and extendibility. Rather than the old "fixed" palette typical of earlier* Control Panels, *the new* Control Panel *that comes with* System *4.1 has a scrollable list of items on the left side of the window. Selecting a cdev icon on the list brings up a list of controls for that icon in the right side of the panel. Each controllable item is defined in a* Contol Panel *device resource file called a cdev, which is a Macintosh resource name that represents "Control DEVice." This makes it very easy for users to add or dispose of items, and for developers to write their own control device routines, which can then be displayed by the* Control Panel *in a consistent manner. For example, a joystick developer could write a cdev that would allow the user to specify the joystick's sensitivity and directional vectors through the* Control Panel.

Whether or not a particular cdev shows up in your Control Panel *depends upon what type of machine you have, what devices you have attached, and whether or not you have the actual cdev file present in your System folder.*

When the Control Panel *is selected it scans the System folder for cdev files. Each cdev file contains a resource which helps the* Control Panel *determine whether or not to display the cdev icon in the scrollable list. The General, Keyboard and Mouse icons will appear on all Macintosh models. The Color Card, Monitors, and Sound icons will appear on the Macintosh II only. The Startup Device icon will appear on both the Macintosh SE and the Macintosh II.*

If a cdev icon doesn't appear in your Control Panel *you can safely throw away the corresponding cdev file in your System folder.*

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DRAW CHANGES

Q. I use *MacDraw* regularly and would like to be able to: 1) Create new fill patterns, and 2) Reduce the size of the arrowhead used in arrow-selected lines. Can you help?
CHARLES SANGAMO
MOUNTAIN VIEW, CA

A. *Pick up a copy of* ResEdit *and you'll be able to change the standard* MacDraw *fill patterns to ones of your own design. Start up* ResEdit, *open the* MacDraw *resources and open the PAT# resources contained in* MacDraw. *You'll see a pattern palette similar to the one used in* MacDraw. *Double-click on this palette and you'll be presented with a screen that will allow you to select a particular pattern and edit it on a bit-level just like* MacPaint *patterns or FatBits. Make your changes, quit* ResEdit, *and click OK to save your changes.*

You won't be able to add additional patterns—only change existing ones. MacDraw *also uses the same pattern resources for both the fill and pen tool selections. So if you change a fill pattern, you've also changed the corresponding pen pattern.*

The size of the arrowhead is hard-coded into the MacDraw *program and as such cannot be modified. I'll pass your suggestion onto the* MacDraw *product manager.*

ANDY MARTIN



STARTUP PROBLEMS

Q. I have a Mac Plus with an HD-20. My problem is that when I turn on the Mac in the morning, it skips the *Finder* and boots right up into an untitled blank *MacWrite* document. If I quit that document, the *Finder* comes up and all is well. The problem happens only during initial start-up. My local Mac dealer is stumped. He suggested I remove the *Keeper* from the system completely. I did, but the problem persists. Any ideas?
KIT BEURET
HONOLULU, HI

A. *Your "problem" is actually a feature. You can designate any Macintosh application, including the* Finder, *as the start-up application to run when you boot the machine. Somehow, you've managed to designate* MacWrite *as your start-up application. It's simple to change. Quit* MacWrite *and return to the* Finder. *Single-click on the icon of the program you wish to designate as the start-up application (In your case, the* Finder *icon contained in your System folder). Then select the* SET STARTUP *command from the* Finder's *Special menu. A dialog box will ask you if you wish to change your startup application from* MacWrite *to the* Finder. *Click OK, reboot your machine, and* voilá.

The Set Startup command is explained briefly on page 126 of your Macintosh Plus Owner's Manual. *Since I rarely read manuals, either, I won't lecture on the virtues of such. I would suggest, however, that your dealer do so.*



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COMPILED BY H. D. PLANT

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WORD

Sometimes it's desirable to do a box inside a graphic box. A good example is a disk label, where you might want to put a date box inside a larger box that serves as the label outline. It can be done in *Word* 3.0X using the Side by side paragraph option. As shown, the graphic is actually two paragraphs side by side, with their margins overlapping. This causes them to print superimposed on each other. Rulers and returns are pretty much self-explanatory. Try a little trial and error in Page Preview mode and you'll see how it works.

You'll find it easier to use Shift-Returns rather than plain Returns, so you're just dealing with two paragraphs.

To make the box within a box, start with the bigger box. Select PARAGRAPH from the Format menu, and format the new paragraph as SIDE BY SIDE, with a single box border. Use Shift-Returns to set the depth and the margin markers on the ruler to set the width of the box. You can add text anywhere in the box. Just position the cursor and type it in.

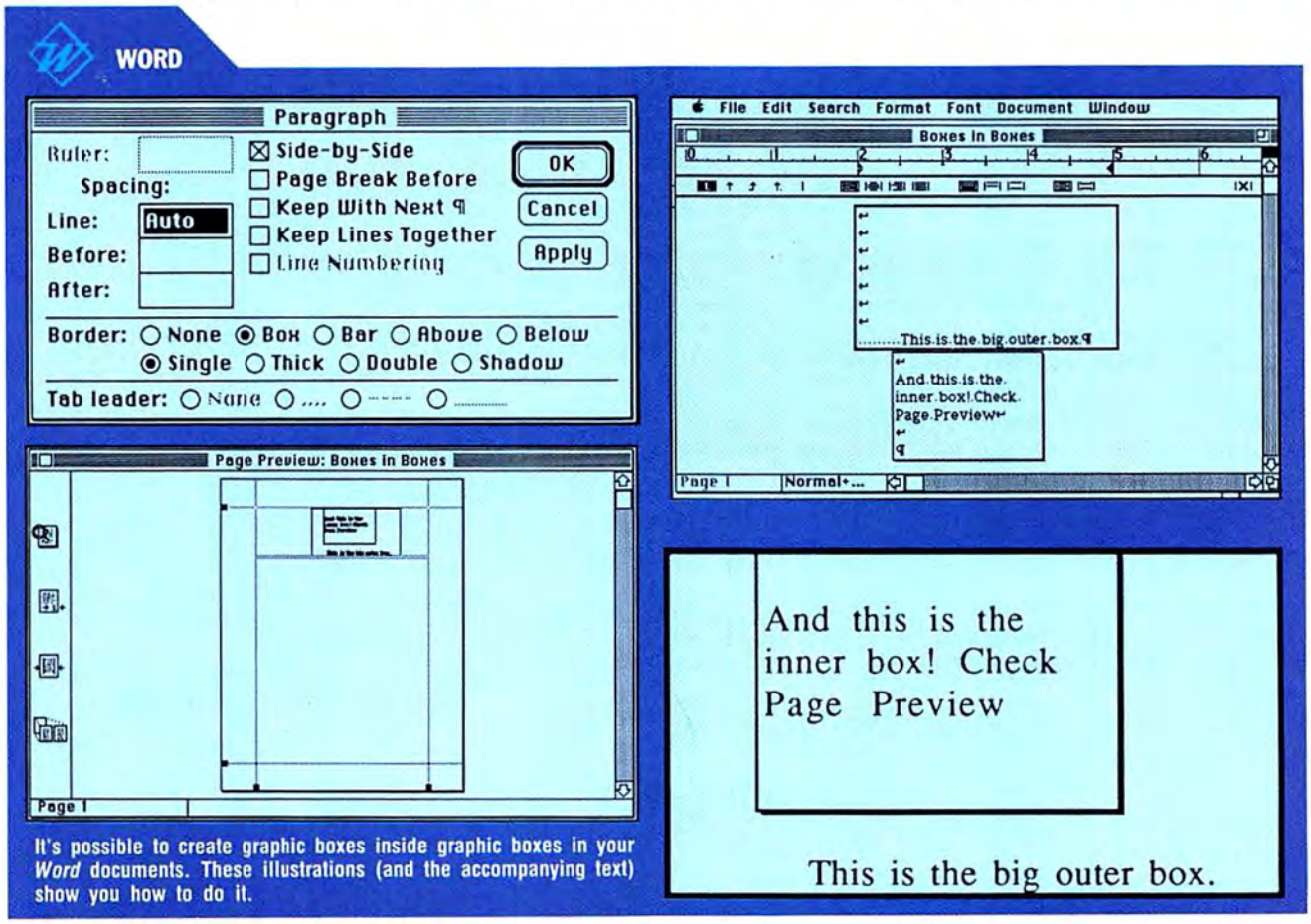
Format the smaller inside box in the same way. Use the margins to place the box in place horizontally. Vertical spacing is pretty much trial and error. Use Returns and check your work in Page Preview.

RICHARD T. WALLACE
COLONIAL HEIGHTS, VA

WORD 3.0

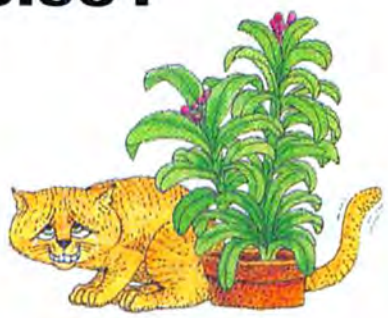
There's a simpler and faster way to count words in a *Word* document than the one given in the August 1987 "Tip Sheet." You'll need a public word counting desk accessory such as Steven Martin's *WordCount Utility* 3.0, which should be installed using *Font/DA Mover* either in your *System* or (my preference) in *Word* itself. *WordCount* can't read *Word* files, but it can read Text files. Thus, all you have to do is save your document (under a different name—say Document-Count) as a Text file (click on FILE FORMAT... in the Save As... dialog box and click the second radio button, TEXT ONLY). Then close this document. Open *WordCount*, open Document-Count and *WordCount* will give you an accurate word count.

IRA GERSTEIN
DORCHESTER, MA



It's possible to create graphic boxes inside graphic boxes in your *Word* documents. These illustrations (and the accompanying text) show you how to do it.

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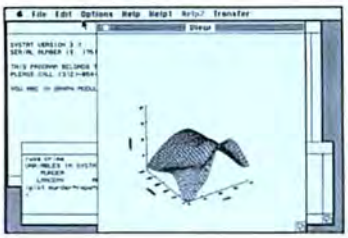
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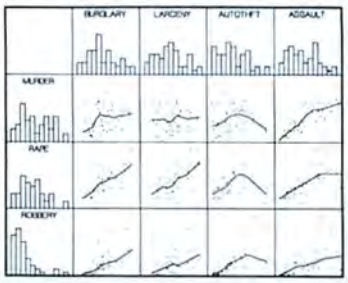
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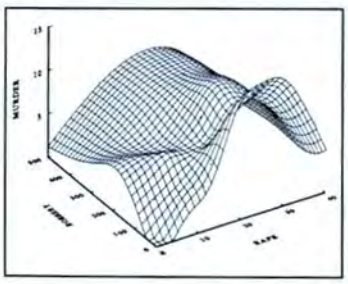
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If you are getting extra spaces between paragraphs (use Page Preview to check; they'll show up there) do the following:

Select the entire document, SHOW RULER, and click the auto-spacing, one-and-a-half spacing, and double-spacing icons in that order and then backwards, ending up back at single spacing. This gets rid of the extra spaces. Note: Don't bother to paginate (or repaginate) until after you perform this step.

MELISSA C. PORTER

[Melissa, we have no address for you. Write us so we can pay you!]

Word will open *any* file that has the file creator MSWD and the filetype WDBN, even if *Word* 3.0 (Or 3.01; 3.01 works wherever 3.0 is mentioned here) was not used to create and, in fact, even if it isn't a word processing file. This "feature" is especially useful when you are recovering files from a damaged disk. When you send such a disk through the repair/recovery facility of *Mac Tools,* you end up with a bunch of "recovered Files." To use these files you give them the correct creator and type.

Start by using *Mac Tools'* Info Edit feature to change the file attributes as follows: Change all the creators to MSWD and all the file types to WDBN. Then launch *Word* 3.0 and open each "Recovered File" in turn.

Word 3.0 files open normally (as you would expect). *MacWrite* and *Word* 1.0X files open after giving you notice of your origin. You can save them in either their original format or in *Word* 3.0 format. All other files will display a warning then open as though they were ASCII text files. The content and arrangement of the data can then be used to determine which files are actually *Excel, FileMaker, MacDraw,* etc., files. You shouldn't have to guess about which attributes belong where. This will save you much time.

HARRY LE BLANC
RALEIGH, NC

When formatting a table in *Word* 3.0 (or any version including 1.0X for that matter), changing the alignment of columns can be difficult if the table is laid out with Returns at the end of each row of data. If that is done, each row is treated as a separate paragraph, and it's a real pain to realign each paragraph separately.

The solution is to end each line of data with a Shift-Return rather than a plain Return. This puts all the data in the same paragraph. Thus, columns can be realigned by clicking anywhere in the data area and then dragging the tab mark on the ruler to the desired location.

RICHARD T. WALLACE
COLONIAL HEIGHTS, VA

Get your upgrade to Word *3.01.*

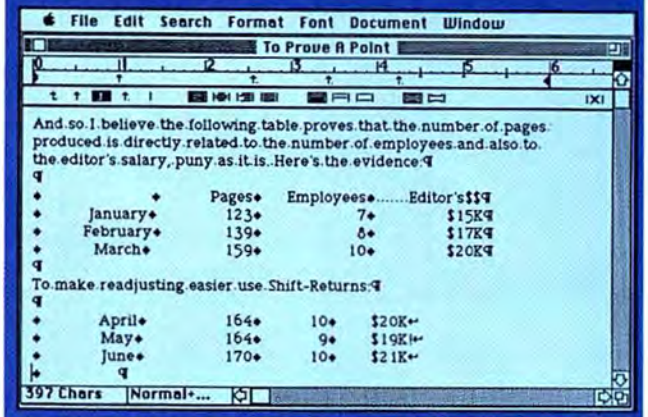
THE EDITORS

READY, SET, GO! 3.0

Here's a way to stretch or compress a headline to change the proportions of the letters. Simply paste the whole text box that contains the headline in a picture box of about the same size. Then, as you change the vertical or horizontal scale of the picture block in the Picture Block Specifications dialog, your headline text will become tall and narrow, or wide and bold, or even tall and wide, to suit your needs.

DOUG MILES
ELLENSBURG, WA

WORD



Changes in the alignment of columns in tables in *Word* documents are much easier if you use Shift-Returns at the end of each line of data rather than ordinary Returns.

THUNDER

After using *Thunder* for a while, you often develop large Supplementary and Learned Words dictionaries. These are arranged with the most recently added items at the top or beginning of the file. If you want, or need, to alphabetize your dictionaries, here's how.

Open them, one at a time, with a DA editor like *MockWrite* or *miniWriter.* Copy everything to the Clipboard, and then import the Clipboard into your favorite data base software. Be sure the file you import to is set up with only one column. Sort the resulting list and Copy it back to the Clipboard. Then return (Paste) the material back to the original files, replacing what is still there.

Sorting the files makes them easier to handle and edit. *Microsoft Works* works particularly well since the spaces in the Learned Words file are handled easily.

R. STEVEN DELL
DALLAS, TX

TRAPEZE

You can use *Trapeze* to balance your checkbook, although data entry is a real chore when lots of checks must be recorded. Here's how you can get the program to number the checks for you, saving many keystrokes and minimizing switching between blocks.

1. Create a block and enter the checks and deposits. Name it "Entries."

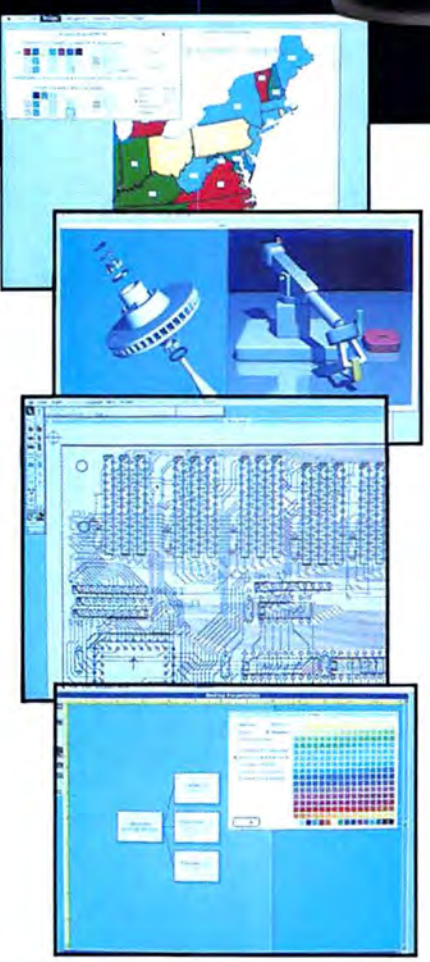
2. Create a second block and name it "Balance." Give it the formula (rsum(Entries)).

3. Create a third block. Name it "Number." If your checks start at number 101, give it this formula: {if(Entries<0, rsum(iserr(Entries>0)) + 100, 0)}

4. If your checks start with

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some other number, say X, then replace 100 by X – 1 in the formula.

5. This method gives all deposits number zero. To assign some other number, replace the zero in the final argument of the *if* function with the number you want (the 0 here is that last single 0 in the formula).

ROBERT P. SPRAGUE
BERKELEY, CA

SCRAPBOOK



If you resize a graphic in *MacWrite* (or any other program) and decide you want to return the graphic to its original size, simply copy the graphic into the Scrapbook. The Scrapbook undoes any stretching or resizing and returns the graphic to its pre-stretched form.

JEREMY KEPNER
MINNEAPOLIS, MN

PAGEMAKER 2.0



PageMaker 2.0 can be used to import material to and export material from Adobe's *Illustrator* program. That program normally has rather limited ways of importing and exporting material. However, it can import and export in the Encapsulated PostScript (EPS) format. Therefore, any material that can be imported by *PageMaker* 2.0—a large and constantly growing list that includes *MacWrite*, *Word*, *MacPaint*, TEXT and PICT files—can be saved as an EPS file and then moved over to *Illustrator*. Here's the exact technique:

1. Create the document you wish to save in *PageMaker* 2.0. This document can be as large (and as many pages) as desired.

2. Select PRINT.

3. Fill in the Print dialog blanks to print one copy of the single page you wish to get into *Illustrator*.

4. Hold down the Option key while clicking the Print button. A new dialog box will appear.

5. At the bottom of this box, check the box in front of "Print PostScript to disk." Also select the EPS option that's on the right side of the box.

6. Now select SET FILE NAME. Save the EPS formatted document under whatever name you want.

7. Now select PRINT again. The desired page will save to your disk (make sure there's plenty of room for it —EPS files can be huge).

8. Exit to the *Finder* or transfer to *Illustrator* and use the file.

ROBERT LEAHY
FULLERTON, CA

DISK LABELS



Have you ever had a label refuse to stick, or worse yet, peel off inside your disk drive? The next time you put a label on, peel off the paper backing and heat the adhesive side with a hair dryer for a few seconds. Then apply the label to the disk. The label will stick longer and better. This technique is an especially good way to apply permanent labels to disks (such as back-up disks) that you expect to take a lot of wear and tear.

LEN KERSHNER
DELRAY BEACH, FL

WORLD BUILDER



Want some great sounds in your games? All sounds in *MacGolf* are ordinary *SoundCap* files, the kind *World Builder* uses. Just copy them over and use them in your adventures.

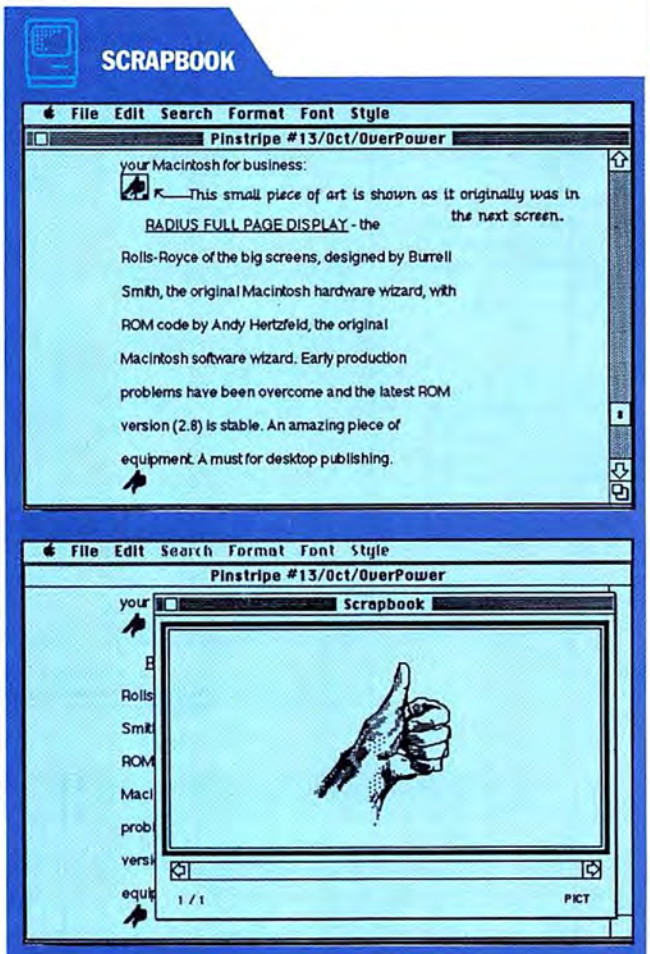
ROB MARTINO
GEORGETOWN, MA

FILEMAKER PLUS



FileMaker Plus lets you define Auto-enter fields where your prespecified string will be entered into a field whenever you click on it to enter data. If you use an Auto-enter field and later wish to change that field's entry options to another choice, it's not enough simply to click on that other choice. You must also select and remove the data in the Auto-enter box. If you don't, clicking in and then out of that field results in a search by the program, although nothing will be done. In a big file this can take several minutes or more. [*Editor's Note:* FileMaker Plus *allows very large files. I know of one that was 8 megabytes and is still growing.*]

DARON RUIZ
RATON, NM



If you've ever resized a graphic in *MacWrite* or some other program and need it back at its original size (a frequent situation here at *MacUser*), use the Scrapbook. Just copy the graphic and paste it into the Scrapbook. The Scrapbook stores it at its original size. You can then paste it (at that size) anywhere you want. It doesn't matter to the Scrapbook how long ago you resized the graphic or whether it had been in that particular Scrapbook before.

"Trapeze allows you to do more things in one application than we have ever seen."

INFOWORLD
JUNE 22, 1987

Desktop Publishing Quality

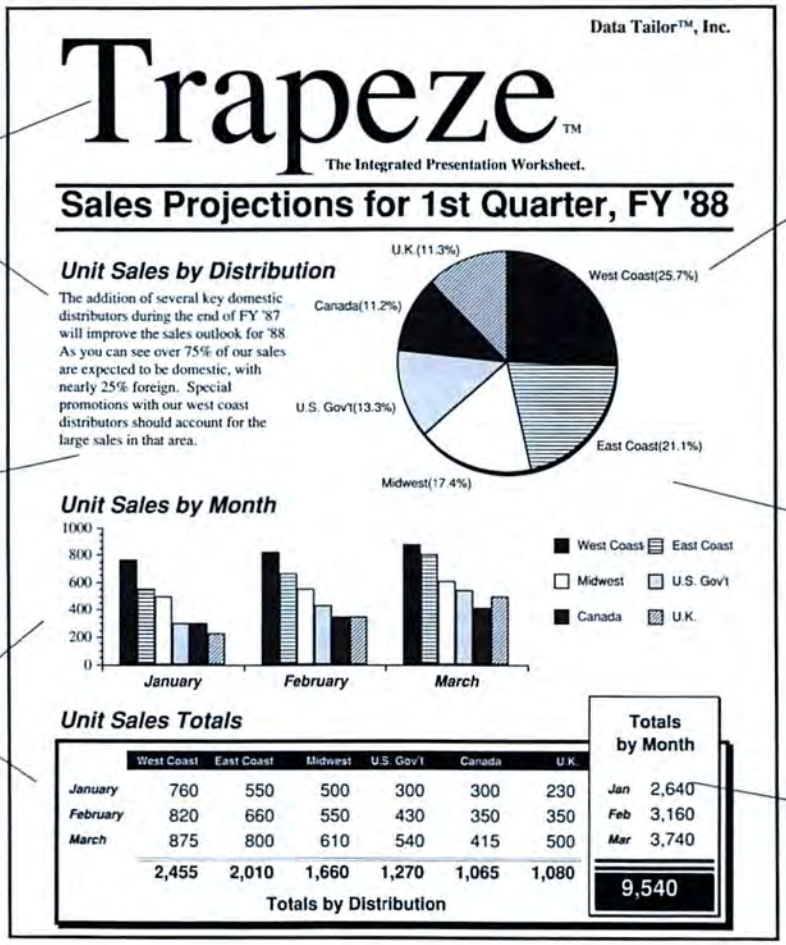
Trapeze lets you use any Macintosh™ font, style, size or color in any block of information, and mix them on a single worksheet. Combining graphics and layout capabilities with powerful data analysis adds a whole new dimension to desktop publishing.

Everything On One Worksheet

Put calculations, text, pictures and charts all on the same worksheet – no need to import from other programs. And have up to 32 worksheets open at the same time.

"Live" Information

No longer are last-minute changes a problem, because your information remains active. Make additions, deletions or "what-if" changes to your data as often as you wish. Trapeze will update every related block of information, including charts. No other program offers this powerful capability.



Flexible, Automatic Charting

Trapeze offers automatic charting functions which surpass even dedicated "chart and graph" programs. Eleven basic chart types are built-in, with thousands of variations possible with a simple click or two of the mouse. And if your information changes, Trapeze updates all related charts automatically.

Power You Control

No matter how complex the data, Trapeze provides the powerful functions you need for analysis. Yet, you retain complete freedom to manipulate the information and its presentation.

Integrated Presentation Worksheet

The result is a clear, eye-catching representation of your information that can make the difference between selling your ideas and sitting on them. Only Trapeze gives you a presentation-quality worksheet in one, integrated program.

One Program. One Worksheet.

Trapeze: the first truly integrated presentation worksheet. It combines spreadsheet, data analysis, text, charting and graphics capabilities in a single program – and lets you perform any or all of them on a single worksheet without the hassle of juggling several programs at once.

Trapeze 2.0 is the most powerful and flexible presentation worksheet on the market. And we believe that, once you try it, you'll agree. If not, return it within 30 days and we'll refund your money.

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Trapeze™

The Integrated Presentation Worksheet.

Minimum system requirements: enhanced Macintosh 512K with 800K external drive. Runs on Macintosh versions 512e, Plus, SE and Mac II (*in color!*). Supports Laserwriter™ and Imagewriter™ I and II.

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If you buy the Macintosh SE™ for its expandability, then at some point you're going to confront the next logical question: namely, what's the best way to expand it?

And that will lead you to a conclusion that's logical to the point of being foregone: HyperCharger 020.™

This is the enhancement board that sets standards for the others.

It will let you run most Macintosh software up to four times faster. It can contribute an additional megabyte of RAM memory and may be easily upgraded to four.

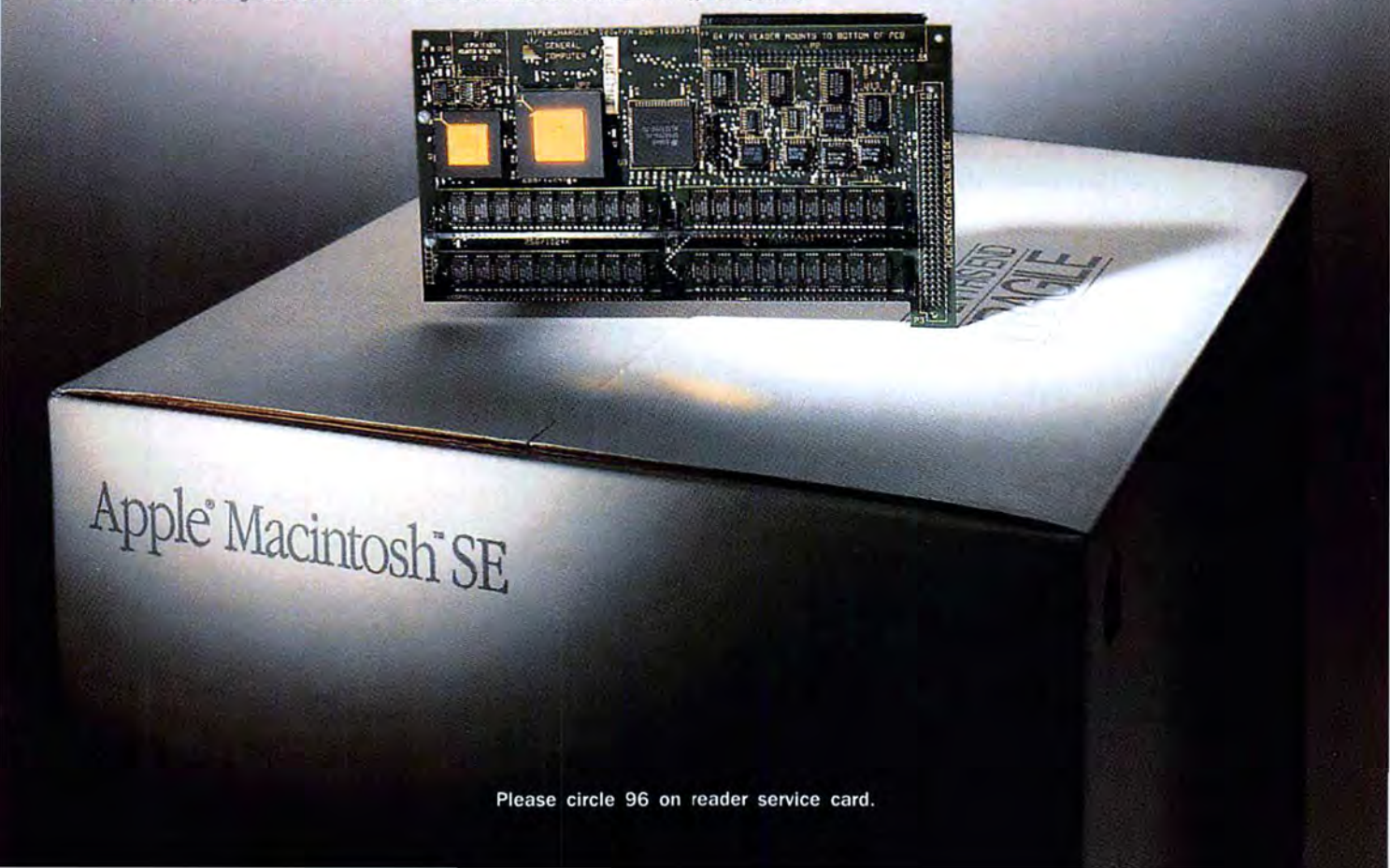
It comes with an expansion port that lets you add E-Machines' The Big Picture™ and other large screen monitors. You can even add a co-processor for serious number-crunching (from 5 to 50 times faster).

All of which makes HyperCharger something more than a sensible addition to your SE: it's the first such add-on you almost have to find a logical reason *not* to add on.

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GENERAL COMPUTER

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MINIFINDERS



Have you often wished for a personal assistant to help in picking software? These MiniFinders may not breathe and move, but they do tell you what products are hot and, better, what these products do. Each of these items has been carefully reviewed and selected by the MacUser editorial staff. Each has been rated in increments of half mice, from 1 to 5. Ratings are relative within categories, and they can change as categories expand and new products advance the state of the art. You won't see many low ratings or bombs, since we're telling you about the cream of the crop, but we will warn you about the really bad products so that you don't spend your money on them. Red names indicate this month's additions. The letters at the end of the entries indicate whether a product is copy protected (CP) or not (NCP). CP? indicates that we don't know. If a product has been reviewed or QuickClicked in MacUser, the date of the review is shown. Next time you have to find products you can count on, count on MacUser!

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INTEGRATED SOFTWARE

Crunch is an icon-driven relational spreadsheet that features ★★★★ versatile charting and data base capabilities. Strong financial logic, date and mathematical functions. Spreadsheets can be linked. The manual is clear and concisely written. Macros are not supported. $195. VisiCorp, 2700 Augustine Dr., Santa Clara, CA 95054. CP (Jan 86)

Excel is THE power spreadsheet. Of the Mac, of the world. Has ★★★★★ 256-column by 16,384-row capability. Features include a powerful macro function (with a recorder to make creation simple) and elaborate charting facilities. 512K+ Mac and external drive required. $395. Microsoft, 16011 NE 36th Way, Redmond, WA 98073-9717. CP (Prem)

Jazz provides well integrated modules for word processing, graphs, ★★★★ worksheets, data bases and communications. HotView is best feature. Requires 512K+ and external drive. Version 1A requires 400K drive. $395. Lotus, 55 Cambridge Parkway, Cambridge, MA 02142. CP (Prem)

Microsoft Works is an integrated application that includes word ★★★★½ processing, data base, spreadsheet and telecommunications functions. The telecommunications module includes background up- and downloading. $295. Microsoft, 16011 NE 36th Way, Redmond, WA 98073-9717. NCP (Oct 86)

Quartet is an integrated program that works on a 128K Mac, built ★★★★ around a powerful spreadsheet with a full range of functions. It can also be used as a data base and provides good quality charts from spreadsheet data. Documentation is adequate, but not too well organized. $49.95. Haba Systems, 6711 Valjean Ave., Van Nuys, CA 91406. CP (Jul 86)

BUSINESS ACCOUNTING

Accountant, Inc. V2.0 integrates accounts payable, accounts ★★★ receivable, general ledger and inventory modules. Prints checks, purchase orders, invoices, customized reports. Bare bones accounting system limited in size and scope, but ease of use and integration make it suitable for small businesses. Requires 512K+. $299. SoftSync, 162 Madison Ave., New York, NY 10016. NCP (Oct 87)

Back to Basics Accounting is a powerful double-entry accounting ★★★★ software package for the small business user with GL, AR and AP modules. Exhaustive manual with numerous examples. Report capabilities are excellent. $199. Peachtree, 4355 Shackleford Rd., Norcross, GA 30093. NCP (May 87)

BPI General Accounting is an easy to use system. Six journals, ★★★★ AR, AP, Payroll and GL on one disk. Offset amounts automatically post to ledgers. Up to 8000 accounts. Detailed records, wide range of reports. *Switcher* and HFS compatible. $249. Requires 512K+. BPI Systems, 3001 Bee Cave Rd., Austin, TX 78746. NCP (Aug 86)

CheckMark is a Ledger with five preset journals: Cash Disburse- ★★★★ ments, Receipts, General, Sales and Purchases. Menus and data entry are very straightforward. Flexible summary reports are built in, but customer and vendor information is very minimal. $295. CheckMark Software, PO Box 860, Fort Collins, CO 80522. CP (Dec 85)

Insight is a high-powered accounting program for the small to ★★★★½ medium size business. At present, three modules are available: Accounts Receivable, Payables and General Ledger; others are in the works. Requires 512K and hard disk. $595. Layered, 85 Merrimac St., Boston, MA 02114. NCP (Dec 86)

Rags to Riches integrated accounting modules (General Ledger ★★★★½ and Accounts Receivable) uses Mac interface to the hilt. Information entered in one window automatically transfers. Version 3.0 now provides detailed, flexible report options. Very easy to use, but it can be confusing with several windows on-screen. Requires 512K+ and printer. $199.95 per module. Chang Labs, 5300 Stevens Creek Blvd., San Jose, CA 95129. NCP (Dec 85)

Rags to Riches Professional Billing tracks and bills profession- ★★★★ al services. Batches activities for individual timekeepers. Use as standalone, or integrate with *R to R* modules. Requires 512K+, printer. $399.95. Chang Labs, 5300 Stevens Creek Blvd., San Jose, CA 95129. NCP (Feb 87)

Strictly Business General Ledger features clear, well-outlined ★★★★ set-up procedures and operations. Very flexible, up to 99 profit centers with up to 100 departments each; and customized reports. Program print spools. Requires 512K+, printer and external drive. $395. Future Design, 13681 Williamette Dr., Westminster, CA 92683. NCP (Dec 85)

PERSONAL FINANCE

Dollars & Sense is a bookkeeping program. Easy to use, with a ★★★ good manual and excellent on-screen help. Will handle up to 120 separate accounts or money categories. Uses standard double-entry accounting techniques. Will work on 128K. $149.95. Monogram, 8295 S. La Cienega Blvd., Inglewood, CA 90301. CP (Mar 87)

MacInTax is an excellent tool for preparing tax forms. Intuitive, ★★★★★ easy to use. Accepts data from leading personal finance programs. Good built-in help. Liberal upgrade policy for current owners. California forms set also available. $99 federal; $45 California. SoftView, 4820 Adohr Lane, Suite F, Camarillo, CA 93010. NCP (Mar 87)

MacMoney is a complete and easy to use personal financial ★★★★½ system. Intuitive data entry. Integrates with *MacInTax*.



Requires 512K+. $74.95. Survivor Software, 11222 La Cienega Blvd., Inglewood, CA 90304. NCP (May 87)

Market Pro is a comprehensive portfolio management program for ★★★★ the generation of fundamental data as well as technical charts and graphs. Requires 512K+, external drive and Hayes-compatible modem. $395. Pro Plus Software, 2830 E. Brown Rd., Mesa, AZ 85203. NCP (Nov 86)

DATA BASES

Business Filevision is a masterpiece of Macintosh programming, ★★★★ the only true graphic data base on any micro. Much more powerful than the original, accepts *MacPaint* graphics. $395. Telos Software, 3420 Ocean Park Blvd, Santa Monica, CA 90405. NCP (Feb 86)

C.A.T. is a dedicated relational data base for managing contacts, ★★★½ activities and time. Difficult to learn, but easy to use. Its rigid structure takes some getting used to, but links between types of data make it easy to keep track of important people and events. $299.95. Chang Laboratories, 5300 Stevens Creek Blvd., San Jose, CA 95129. NCP (Nov 87)

Double Helix is an environment to generate custom applications ★★★★ built around a data base-type framework. Contains enhancements to *Helix* 2.0. Includes custom menus, sub form windows, password protection and a universal dump and load parser. Ability to store pictures as data fields. $495. Odesta, 4084 Commercial Blvd., Northbrook, IL 60062. NCP (Oct 86)

File is a flexible data manager. Creates files for a variety of data, ★★★★ including simple graphics. Files are created in simple row/column format, but reports and forms are easily customized. $195. Microsoft, 16011 NE 36th Way, Redmond, WA 98073-9717. CP

FileMaker Plus retains features of *FileMaker* and reads *FileMaker* ★★★★★ data, also displays up to 8 files, uses "lookup" to retrieve data from other files. Enhanced calculation with many additional functions. Scripts automate a sequence of actions. Requires 512K+. $295. Nashoba Systems, Inc., 175 Sudbury Rd., Concord, MA 01742. NCP (Nov 86)

4th Dimension is a powerful relational data base that creates ★★★★½ standalone applications. Features a Pascal-like programming language environment. Tech support is currently spotty. $695. Acius, 20300 Stevens Creek Blvd., Cupertino, CA 95014. NCP (Nov 87)

Helix is a relational data base that makes extensive use of icons. ★★★★ Setup is easy due to adherence to the Mac interface. The manual is clear, thorough and well-indexed. Complicated for simple data base applications, excellent where a relational power is needed. Requires 512K+ and external drive. $395. Odesta, 4084 Commercial Blvd., Northbrook, IL 60062. NCP (Mar 86)

MacDewey! (version 2.5) is a cataloging program featuring the ★★★ Dewey Decimal Classification system. Uses predefined fill-in-the-blank fields to create catalog cards. Suffers from bugs in search routines and the inability to distinguish first names. Not for professionals; home libraries might benefit. $79.95. Mousetrap Software, 336 Coleman Dr., Monroeville, PA 15146. NCP (Nov 87)

MacRelax is a relational list manager that stores data in a column ★★ format. Files can be related by sharing a common field. Flexible design for reports. Screen display is sometimes strange. Easy to use but not obvious to learn. $59.95. 512K required. Arrays, 6711 Valjean Ave., Van Nuys, CA 91406. NCP (Jan 87)

Omnis 3 is a power data base, featuring concurrent multiple file ★★★★ management. Can handle 24 files, 12 at a time, and is fully relational. Create custom environments including user-defined menus, commands and dialogs. $495. Blyth, 2929 Campus Dr., San Mateo, CA 94403. NCP (Mar 86)

OverVUE is a power-packed relational data base that has extensive ★★★★½ sorting, summarizing and report generation capacity. Has macros and a charting function. Good manual. It can exchange files with a very wide variety of other programs (including IBM software). $295. ProVUE, 222 22nd St., Huntington Beach, CA 92648. NCP (Nov 85)

Professional Bibliographic System is a specialized data base ★★★★ storing and retrieving bibliographies. Redesigned templates (20) simplify creation. Version 2.6 offers improved speed, flexible formatting. $295. Personal Bibliographic Software, Box 4250, Ann Arbor, MI 48106. CP (Feb 87)

Record Holder is a flexible, easy-to-use form-oriented data ★★★ manager. Setup is particularly simple and the search features are powerful. $69.95. Software Discoveries, 137 Krawski Dr., South Windsor, CT 06074 NCP (Apr 86)

Reflex For The Mac is a flexible relational data base. Excellent ★★★★½ report generator gives full control over appearance, style of output. Requires 512K+, second drive or hard disk. $99.95. Borland International, 4585 Scotts Valley Dr., Scotts Valley, CA 95066. NCP (Dec 86)

Writer's Workshop maintains orderly records for writers. It can ★★★½ track manuscripts, income and publisher. Based on and includes *Runtime Helix*. $99.95. Futuresoft System Designs, PO Box 132, New York, NY 10012. NCP (Apr 87)

NUMBER CRUNCHING

DesignScope is a construction kit for digital and analog circuits. ★★★★ Up to 254 components can be utilized in a single circuit, and the equivalent of a dual trace oscilloscope plots output in real-time. Good for testing circuitry without touching a breadboard. $249.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP (Nov 86)

MacCalc is a fast, competent, full-featured spreadsheet with ★★★★ impressive built-in functions, font control, on-line help, ability to expand columns and rows and read/write SYLK or WKS files. The worksheet is 125 columns by 999 rows. Cell names, printing power make *MacCalc* a very flexible pure spreadsheet. $139. Bravo Technologies, c/o DPAS, PO Box T, Gilroy, CA 95021. NCP (Sep 86)

MacSpin is a unique and powerful graphic data analysis program. ★★★★ Handles multivariate data in a highly visual manner. Nothing else like it for any micro. $199.95. D2 Software, PO Box 9546, Austin, TX 78766-9546. CP (Jun 86)

Mindsight is a professional level decision support and business ★★★★ planning package. Can work with IFPS on mainframes, and is able to transmit models in both directions. Powerful and easy to use. Requires 512K+. $249. Execucom Systems, PO Box 9758, Austin, TX 78766. CP (Dec 86)

Multiplan, the first Mac product from someone other than Apple, ★★★½ is beginning to show age. Still a very capable basic spreadsheet with simple sorting, 63 columns by 255 rows, many built-in functions, other standard spreadsheet features. $195. Microsoft, 16011 NE 36th Way, Redmond, WA 98073-9717. CP (Mar 86)

Parameter Manager is a data manager, incorporating integrated ★★★★ scheduling, statistics and graphics. It has solid spreadsheet, calendar and data base functions, and reports can be customized using other software. *Parameter Manager* can also import data from *Excel* or *Lotus 1-2-3*. $495. SMS, 651 River Oaks Parkway, San Jose, CA 95134. NCP (Jul 87)

StatView 512+ is a very intuitive statistical analysis program with ★★★★★ tools needed to understand any set of data. Holds data in a spreadsheet-like form. Full-featured, fast and accurate. Extremely wide range of analyses possible. Requires a minimum of 512K of RAM & 800K of disk space to operate. $349.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP (Dec 86)

StatWorks is a general-purpose statistics package that is both ★★★★ powerful and easy to use. Handles all standard tests and procedures. Single variable and multivariate statistics are supported. $125. Cricket Software, 30 Valley Stream Pkwy., Malvern, PA 19355. NCP (May 86)

Trapeze is a powerful spreadsheet program that functions through ★★½ use of blocks. Blocks can contain the usual spreadsheet-



type cells, rows or columns, text, pictures and any type of special graphics. Includes financial, conversion and transcendental functions. $295. Data Tailor, 1300 S. University Dr., Fort Worth, TX 76107. NCP (Jun 87)

GRAPHICS & DESIGN

CalendarMaker creates monthly calendars in a variety of formats. ★★★★½ Users can incorporate their art and daily notes. Note files can be imported from a variety of DA calendars and outliners. Shareware and prelicensed versions available. $30. CE Software, 801 73rd St., Des Moines, IA 50312. NCP (Dec 86)

Chart can easily create area, bar, column, line, pie, scatter and ★★★½ combination charts. A total of 42 styles are provided. Limited to 100 data items (64 in a series) on a 128K Mac, approximately twice that on a 512K Mac. $125. Microsoft, 16011 NE 36th Way, Redmond, WA 98073-9717. CP

ClickArt Special Effects is a *MacPaint* enhancement desk ★★★½ accessory. Allows the user to distort, stretch, rotate and use perspective on *MacPaint* documents. A necessary addition for all serious users of *MacPaint*. $49.95. T/Maker, 1973 Landings Dr., Mountain View, CA 94043. NCP (Apr 86)

ColorPrint allows you to print *FullPaint*, *MacPaint*, *MacDraw* and ★★★ *MacDraft* documents in color using the ImageWriter II or ImageWriter I. *Paint* files set up as overlays are read into *ColorPrint*, and the program controls proper positioning registration. $29.95. I/O Design, PO Box 156, Exton, PA 19241. NCP (Mar 86)

Cricket Draw is an object-oriented drawing program that will ★★★★★ produce stunning, high-quality output. Designed to print on PostScript-compatible devices, such as the LaserWriter. Making shadows and flowing fountain effects are just a point and click away. $295. Cricket Software, 30 Valley Stream Pkwy., Malvern, PA 19355. NCP (May 87)

Cricket Graph easily generates 12 graph types. Multiple windows ★★★★★ can be displayed. *Graph* prints in up to 8 colors with up to 16 patterns. Self-generating macro formatting. *Switcher*, HFS, LaserWriter and plotter compatible. $195. Cricket Software, 30 Valley Stream Pkwy., Malvern, PA 19355. NCP (Jun 86)

Easy3D is a three-dimensional, solid modeling masterpiece. Four ★★★★ variable light sources, powerful sculpting tools and an exquisite user interface make this a must-have for graphics enthusiasts. Requires 512K+. $149. Enabling Technologies, 600 S. Dearborn, Chicago, IL 60605. NCP (May 86)

EZ Draft is a high-level CAD application. Does things usually only ★★★ found on minicomputer programs. Uses "pop-up" menus to supplement a full set of pull-down menus. Comes with an additional set of printer/plotter/monitor drivers. A real powerhouse. $1995. $500 for IEGS module to link to other CAD programs. Bridgeport Machines, 500 Lindley St., Bridgeport, CT 06606. CP (May 87)

FastForms! Construction Kit is both a fast and efficient business ★★★★★ forms creator (a drawing program) and a specialized application (and DA) to fill out the data fields in your forms. $89. New Directions, 2915 19th St., NE, Calgary, Alberta. NCP (Nov 87)

Fluent Fonts is a two-disk collection of fonts. Forty-nine different ★★★★ items are included. All install easily in user systems. Most are well executed and some are extraordinarily nice. This is a real bargain for font lovers. $49.95. CasadyWare, PO Box 223779, Carmel, CA 93922. NCP

Fontastic is the best font editor now available for the Mac. ★★★★½ Features a large editing window with a grid to make positioning easy. Select letters to edit by clicking on a matrix of the font. Allows scaling of existing fonts and previewing the various styles (italic, bold, etc.). $49.95. Altsys, PO Box 865410, Plano, TX 75086. NCP (Dec 85)

Fontographer is a complex, but excellent laser font creator. The ★★★★½ fonts created have 300 bits per inch resolution. The fonts are actually downloadable PostScript files. $395. Altsys, PO Box 865410, Plano, TX 75086. CP

FullPaint is an expanded version of *MacPaint*. Features include ★★★★★ full-screen drawing, multiple documents open simultaneously, brush editing, movable tool palettes, special text effects and much more. It fills the gaps left by *MacPaint*. $99.95. Ann Arbor Softworks, 2393 Teller Rd., Newbury Park, CA 91320. NCP (Jun 86)

GraphicWorks 1.1 is a powerful drawing and painting program ★★★★ that creates high-resolution bit-maps. Easels contain graphics, balloons hold text and both reside on panels. Graphic primitives are now a separate tool. $99.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. NCP (Oct 87)

GraphIdex indexes *MacPaint* and *MacDraw* format graphics with- ★★½ out removing them from their original documents. Indexed graphics are retrieved via the *Graphidex* DA. Can modify an indexed graphic without affecting the original. Best for bit-mapped (*Paint* format) images but the design is questionable and the execution imperfect. Requires 512K. $124.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP (May 87)

GridMaker is a tool for artists who use perspective. The program ★★★ automatically generates a series of three-dimensional plane sets that can be pasted into *MacDraw*. Sizes and viewing vantage point are easily modified. $49. FolkStone Design, Inc., PO Box 86982, North Vancouver, BC V7L 4P6, Canada. NCP (Nov 86)

Illustrator is a professional-level graphics program. Unique and ★★★★½ powerful drawing technique. Program uses templates for precise and detailed art work. Requires 512K+. $495. Adobe Systems, 1870 Embarcadero Rd., Palo Alto, CA 94303. CP until registered. (Jul 87)

Japanese Clip Art is a two-disk set of extraordinary Japanese clip ★★★★½ art. Consists of *MacPaint* documents and separate fonts. Volume I, Heaven, covers mythological subjects; Volume II, Earth, has secular subject matters. $79.95 each volume; $149.95 set. Qualitas Trading Company, 6907 Norfolk Rd., Berkeley, CA 94705. NCP (Apr 87)

LaserFonts are new fonts for the LaserWriter. Users download ★★★★ them to their machines. Very high quality and very simple to use. *Willamette* looks like Avant Garde. *MicroFonts* provides tiny, expanded and condensed versions of the LaserWriter's own fonts. $34.95 to $44.95 each. Century Software, 2483 Hearst, #175, Berkeley, CA 94709. NCP

The Mac Art Dept. is a collection of over 150 graphic images ★★★★ ranging from foods to hands holding signs to borders. Best suited for letterheads, memos, other business use. $39.95. Simon & Schuster, Computer Software Div., 1 Gulf & Western Plaza, New York, NY 10023. NCP (Mar 86)

Mac-a-Mug is an Identikit type program for creating faces from ★★★½ facial feature files. Uses scroll bars that are slow and jerky. Lots of creative fun. 512K+ Mac required. $59.95. Shaherazam, PO Box 26731, Milwaukee, WI 53226. CP (Jul 86)

MacDraft is an object-oriented graphics program. It sports ad- ★★★★ vanced features such as variable scaling, single degree rotation, complex arcs and a FatBits-like magnification mode. Best used to complement *MacDraw*, not replace it. $239. Innovative Data Design, 2280 Bates Ave., Ste. A, Concord, CA 94520. NCP (Feb 86)

MacDraw is an object-oriented structured graphics program. Can ★★★★½ be used to design forms, create presentation materials and do technical illustrations. Drawing sizes up to 8 feet by 10 feet are possible. Text can be easily generated and integrated in the graphics. $195. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Nov 85)

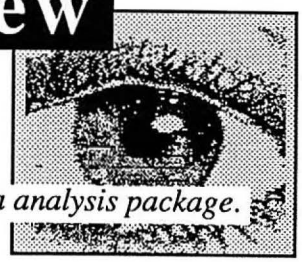
MacModel is an economical 3D package with shading. Somewhat ★★★ sketchy Mac interface, shading speed slow (but acceptable), grainy image resolution. On-line help screens are a welcome addition. Frequent updates and low price make this a reasonably good buy. $40. A.P.P.L.E. CO-OP, 290 SW 43rd St., Renton, WA 98055. NCP (Aug 86)

MacPaint is the graphics program that started a whole new genre. ★★★★ Still the best freehand graphics tool. Version 1.5 supports 512K+ Macs and the LaserWriter. Multiple tools, patterns

BrainPower, Inc.

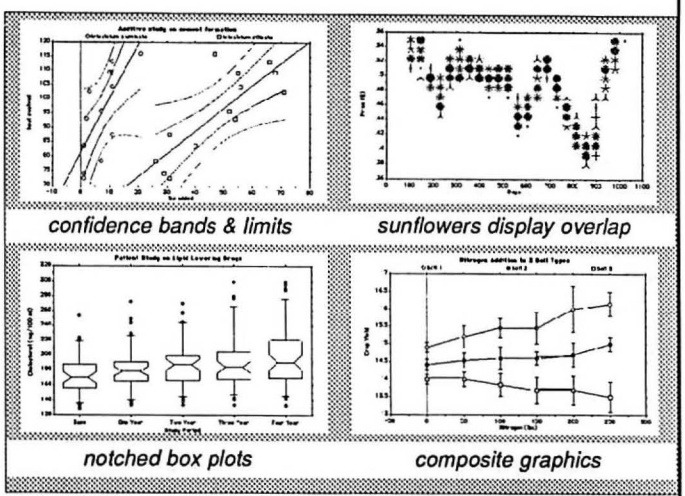
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confidence bands & limits *sunflowers display overlap*

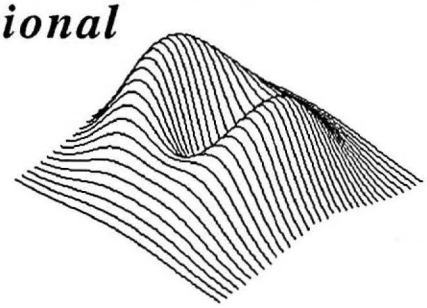
notched box plots *composite graphics*

Requires 512K of RAM and 800K of disk drive capacity.
Demo disks: $20.00. **$349.95**

New...

MathView

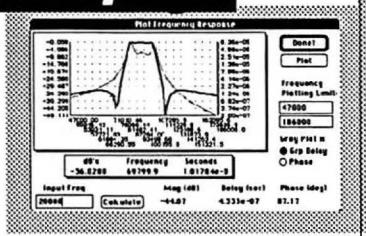
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MathView *Professional*™ is a powerful, stand–alone mathematics package that handles a wide range of mathematical problems in the following areas: function evaluation; solving systems of linear and non-linear equations; 2 and 3 dimensional plotting of functions; matrix operations; Fast Fourier transformations; numerical integration; real and complex root finders; constrained and unconstrained optimization; statistics; series operations; partial and ordinary differential equations *and much more!*

MathView *Professional* requires a Macintosh with at least 512K of RAM, the 128K ROMs, and 2 disk drives. MathView *Professional* will ship September 15, 1987. MathView *Professional* $249.95. Demo disks: $10.00.

DesignScope



Save *time and money* as you speed up validation of system level design. Analog and digital systems can be assembled, simulated, changed, resimulated in a matter of minutes. Data defining waveforms can be imported/exported via clipboard or text file. Includes up to 16th order VC filters (with response plots), PLLs, VCO's, digital logic gates, FFTs, oscilloscopes, amplifiers, comparators, and more. DesignScope, system level simulation on any Macintosh with at least 512K, is $249.95. Demo disk: $10.00.

Graphidex



...a graphics management system that lets you index graphics and *retrieve, edit, and paste* them from inside any application! Graphidex allows you to index 10,000 MacPaint or MacDraw pictures in a single index. The index is the key to having those pictures at your fingertips from inside word processors, page layout programs, and graphics packages. The Graphidex desk accessory, in addition to accessing the pictures, provides a full pallet of on–line graphic modification tools including fatbits editing, rotating, resizing, inverting, and adding borders. Graphidex, with 300 general purpose graphics indexed, is $124.95 and requires 512K of RAM. Demo: $10.00.

BrainPower, Inc. 24009 Ventura Blvd, Calabasas, CA 91302 (818) 884–6911 (800) 345–0519

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and features too numerous to describe. A work of art for artists. $125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP

Mac3D 2.0 is a feature-laden 3D program with a *MacDraw*-like ★★★★ interface. PostScript-resolution shading with six variable light sources, user-definable tools, and many more features make this a powerhouse. $249. Challenger Software, 18350 Kedzie Ave., Homewood, IL 60430. NCP (Jan 87)

MapMaker produces maps and analyses of related geographical ★★★★½ data. Additional data disks available. Documentation could be better. Requires 512K; second drive recommended. $295. Select Micro Systems, 40 Triangle Ctr., Yorktown Heights, NY 10598. NCP (Jan 87)

MGMS: Professional CAD for Macintosh offers more than 200 ★★★★ functions. Very complete, capable program. Groups, Dimension, Libraries, etc. are standard. Sometimes confusing—designed for experienced, professional CAD user, not the novice. Full plotter support. 512K+ or Mac XL. $799. Micro CAD/CAM, 3230 Overland Ave., Los Angeles, CA 90034. NCP (Nov 87)

MiniCad V3.0 is a pro level CAD package. Vast array of features, ★★★★ many accessible only through command/shift/option key combinations. Works in 2-D or 3-D with easy transition from one to the other. *MacDraw*-like interface makes it easy to learn and use. Requires 512K+. Diehl Graphsoft, Inc., 8370 Court Ave., Suite 202, Ellicott City, MD 21043. CP (Oct 87)

MockPackage+ is a set of extremely powerful DAs. Includes a ★★★★½ text editor, text printer (supports LaserWriter), charter, terminal and EZmenus. HFS compatible. $35. CE Software, 801-73rd St., Des Moines, IA 50312. NCP (Mar 87)

PageMaker uses a graphics studio metaphor to make this layout ★★★★½ program a natural for pasteup artists. Version 2.0 adds automatic kerning and hyphenation. Excellent documentation. Could use a global search and replace for design elements. $495. Aldus Corp, 411 First Avenue South, Seattle, WA 98104. NCP (Oct 87)

Phoenix 3D is an economical 3D drawing package, with features ★★★★ that belong in a more expensive program. Multiple light sources, fine object placement and orientation control, and a good selection of shapes. $49.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247. NCP (Oct 86)

PictureBase 1.2 is the updated version of the powerful graphic ★★★★½ librarian. You can store paint and PICT formatted items and attach keywords for later search and retrieval $69.95. Symmetry Corp., 761 E. University Dr., Mesa, AZ 85203. NCP (Sep 87)

Portfolio: Designs for Newsletters provides over 20 templates ★★★★ for 2-page newsletters with pre-set columns, headlines, graphics and captions. Documentation provides excellent tutorial in page design. Includes DA called *Wyzzy* that optimizes screen fonts and copyfit. Requires 512K+; *PageMaker*. $79.95. Aldus Corp., 411 First Avenue South, Suite 200, Seattle, WA 98104. NCP (May 87)

The Print Shop makes it easy to create greeting cards, signs, ★★★½ banners and letterheads. Uses its own special graphics and can import *Paint* files. Hard disk users get version 1.02 or higher. $79.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP (Sep 87)

Quark Xpress is a high end desktop publishing application. Layout ★★★★★ is done in block format; powerful lining tool ties blocks together. Copy protection impedes usefulness. $695. Quark, 2525 W. Evans, Denver, CO 80219. CP (Sep 87)

Ragtime is an "Integrated Page Processor" with text, graphics and ★★★★ built-in spreadsheet. Flow text automatically from one frame

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to another. Spreadsheet has a full set of functions. Excellent, easy to use program. Requires 512K+. $395. Orange Micro, 1400 N. Lakeview, Anaheim, CA 92807. NCP (Apr 87)

Ready, Set, Go! 3 is the newest of the *Ready, Set, Go!* page layout programs. New version offers power word processing and excellent control for text and graphics placement. Slow printing with complex pages. $395. Letraset, USA, 40 Eisenhower Dr., Paramus, NJ 07652. NCP. (Jul 87)

Slide Show Magician 1.3 is useful for creating full screen audio-visual presentations on the Mac. Frame branching, improved editing capabilities, external cassette recorder synchronization and digitized sound. $59.95. Magnum, 21115 Devonshire St., Chatsworth, CA 91311. CP (Mar 86)

Space Edit is a 3-D CAD program. Display shows top, front, side and axonometric views of an object, all at once or one at a time. Has standard CAD features plus zoom, exploded view, animated flyover. Suppression of hidden lines is very slow. Requires 512K+. $625. Abvent, 9903 Santa Monica Blvd., Suite 268, Beverly Hills, CA 90212. CP. (Jul 87)

Storyboarder produces working animated storyboards for use in film and video production. Imports graphics from *MacPaint;* allows screen masking to simulate television, 35mm or 70mm screen widths; allows limited animation and special effects. $495. American Intelliware, PO Box 6980, Torrance, CA 90504. CP (Nov 86)

SuperPaint is a powerful, easy-to-use graphics program with all the best features of *MacPaint* and *MacDraw* — and then some. Among the new features, LaserBits provides 300 dpi magnification and there are 40 editable brush shapes. Requires 512K+. $149.99. Silicon Beach, 9580 Black Mountain Rd., PO Box 261430, San Diego, CA 92126. NCP (Feb 87)

WetPaint consists of two 3-disk volumes of very high quality clip art. Also includes the *Art Roundup* DA, the best art browser /editor yet. Volume 1 or 2, $39 each; both Volumes, $59. Available in *PictureBase* format for $15 extra per volume. Dubl-Click Software, 18201 Gresham St., Northridge, CA 91325. NCP (Sep 87)

World-Class Fonts! comes in two volumes of three disks each. Includes all the *Mac the Knife* fonts and a lot more, including 2 useful utilities. This is now the best collection of ImageWriter fonts available. Each volume: $39; both volumes: $59. Dubl-Click Software, 18201 Gresham St., Northridge, CA 91325. NCP (Dec 86)

COMMUNICATIONS

AppleShare is the long awaited file sharer from Apple. Software-based, *AppleShare* requires you to dedicate a Mac and a hard disk to run it. Allows users on the network to protect things from other users on the folder level. Interface to network is provided at a revised *Finder.* $799. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (May 87)

HomePak is a package consisting of *HomeTerm,* an excellent, simple telecommunications program with strong macro features; *HomeFind,* an electronic filer as bad as *HomeTerm* is good; and Apple's *Edit,* a simple, non-HFS-compatible text-file editor. $49.95. Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404. NCP (Sep 86)

InBox is an easy to use mail system. It's called up from a desk accessory. Has a very slick interface. Dedicated Mac not required. $350 for starter set which includes one Adminis-

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MINIFINDERS

trator disk and three Connection disks. Additional Connections cost $125 each. Think Technologies, 135 South Rd., Bedford, MA 01730. NCP (May 87)

InTalk comes with its own communications command language ★★★★½ able to do unattended sessions. Supports Xmodem and MacBinary. Has a macro key function. Many sample set up documents and command language files provided. $195. Palantir, 12777 Jones Rd., Houston, TX 77070. NCP (Prem)

InterMail is an electronic mail system that runs under AppleTalk. ★★★★½ Supports file transfers across the mail system. Full on-line help facility. Also includes "While you were out" messages. Desk accessory based. Prices determined by number of users licensed. One to four users, $299.95; 5 to 10 users, $499.95; 11 to 20 users, $749.95; 21 or more users, $949.95. Interactive Network Technologies, 20 Amy Circle, Waban, MA 02168. NCP (May 87)

MacTerminal provides basic telecommunications and terminal ★★½ emulation for the Mac user. Doesn't have macros nor any sort of auto redial/auto logon capability. Best for those needing faithful VT100 or IBM 3278 emulation—it is superb at those. $125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Prem)

Microphone is a high-powered terminal program that's easy ★★★★½ enough for novices. Very powerful command language allows full automation of communications, if desired. $149. Software Ventures, 2907 Claremont Ave., Berkeley, CA 94705. NCP (Jul 86)

Red Ryder is a full-featured telecommunications program that ★★★★½ supports MacBinary, Xmodem and Kermit. Remote service procedures, auto procedure writer and keyboard macros allow automation of many operations. It is shareware and a real bargain. $40. The FreeSoft Corp., 10828 Lacklink, St. Louis, MO 63114. NCP (Jul 86)

Smartcom II balances power and ease of use. Capable of ★★★★½ unattended operation and has a very powerful command language. Supports MacBinary, Xmodem, and Hayes Verification protocols. The large screen buffer can easily be archived. $149. Hayes, 5923 Peachtree Industrial Blvd., Norcross, GA 30092. NCP (Jul 86)

TOPS is a file server that is designed to network computers with ★★★★½ different operating systems. The current system will support Macs, MS-DOS compatibles and UNIX. Access to files and subdirectories is transparent to the user, they appear as Mac folders. Only handles ASCII or Text files. $149 for Mac version. $389 for PC's (comes with add-on card). Centram Systems West, 2560 Ninth St., Berkeley, CA 94710. Serial number protected. (May 87)

VersaTerm features include DEC VT100 and VT52, Tektronix 4014 ★★★★½ graphics terminal and Data General DG200 emulation. Supports Xmodem and MacTerminal Xmodem protocols and MacBinary. *VersaTerm* is easy to use and well documented. $99. Peripherals, Computers & Supplies, 2457 Perkiomen Ave., Mt. Penn, PA 19606. CP (Prem)

VersaTerm-Pro is a very powerful terminal program with several ★★★★½ special features. Does one of the best VT100 emulations available and specializes in high-quality Tektronix 4014 and 4105 emulation. A pro's tool. Requires 512K+. $295. Peripherals, Computers & Supplies, 2457 Perkiomen Ave., Mt. Penn, PA 19606. NCP (Apr 87)

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Document Compare allows users to compare any two *MacWrite* ★★★ 4.5, ASCII or MDS documents. Differences in spelling,

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punctuation, formatting and wording are detected. Documents can be printed out with differences highlighted. $99. Legalware, 33 Young St., Toronto, Canada M5E 1S9. NCP

Document Modeler can automate much of a professional office's ★★★★½ correspondence. Comes in two parts: *Template Maker* and *Document Maker*. Initial set-up requires time and is complex. $299.95. Legalware, 33 Young St., Toronto, Canada M5E 1S9. NCP (Mar 87)

Doug Clapp's Word Tools is a useful punctuation and style ★★★★ editing program. It won't turn you into a Proust, but it will help you make your writing cleaner and clearer. Word counts among different formats show discrepancies, but not to worry. Requires 512K+. Aegis Development, 2125 Pico Blvd., Santa Monica, CA 90405. NCP (Sep 87)

Expressionist is a powerful DA that allows you to create complex ★★★★★ mathematical equations from within an application. Equation manipulation has never been easier. $79.95. Allan Bonadio Associates, 1579 Delores St., San Francisco, CA 94110. NCP (Jul 87)

JustText is a professional level word processor and page makeup ★★★★½ program that generates PostScript output. Comes with a set of LaserWriter utilities that allow total manipulation of art and text. Requires LaserWriter or other PostScript compatible output device. $195. Knowledge Engineering, GPO Box 2139, New York, NY 10116. NCP (Dec 85)

Kadmos Greek Font is a full character set of ancient Greek that ★★★½ prints on any PostScript printer. Requires learning new typing skills, but excellent quality makes it worth the effort. Allotype Typographics, 1600 Packard Rd., Ann Arbor, MI 48104. NCP (Oct 87)

Laser Author is a high-powered, technically oriented word processor. Good math setting capability. Has style sheets, word ★★★½ count and page layout capability. $199.95. Firebird Licensees, PO Box 49, Ramsey, NJ 07446. NCP (Mar 87)

Liberty Spell Checker is a fast, effective interactive checker. The ★★★½ dictionary is smaller than average, but well chosen. Unfortunately, it has a few misspelled words. $59.95. DataPak, 14011 Ventura Blvd., Sherman Oaks, CA 91423. CP (Oct 86)

MacGAS is a DA spelling checker with both a small and extended ★★★ dictionary. Its best point is the excellent thesaurus, provides antonyms & glossary. A slow checker. $99. EnterSet, 2380 Ellsworth, Berkeley, CA 94720. CP (Oct 86)

MacLightning is an interactive spelling checker in desk accessory ★★★★½ form. Text can be checked on the fly or by selection. Works within many applications, and options include a thesaurus, medical and legal dictionary. $99.95. Target Software, 14206 Southwest 136th St., Miami, FL 33186. NCP (Oct 86)

MacProof is a grammar, style and spelling checker that's like ★★★★½ having your own personal copy editor. Grammar rules are fixed, and you may not agree with the choices. The program only suggests corrections, it doesn't make them for you. And the checking process can be slow if your document is long. $195 for standalone version; $2500 for networked version. Automated Language Processing Systems, 190 West 800 North, Provo, UT 84604. NCP (Apr 87)

Macspell+ (version 1.10) is a spelling checker that installs as a ★★★★ desk accessory. Works easily with *MacWrite* 4.5 and 2.2 and *Word*, but has some drawbacks. New version just available. Requires 512K+, two drives or hard disk. $99. Creighton Development, 16 Hughes St., Irvine, CA 92718. NCP

MacWrite is the basic Mac word processor. While it doesn't have ★★★★ every bell and whistle, it is more than adequate for most users. Features include global search and replace, page numbers indicated in the scroll bar and excellent LaserWriter

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compatibility. $125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP

MindWrite is an outliner-based word processor of considerable power. Besides outlining, it allows multiple documents and multiple selections. Excellent if you like to outline your writing first. $295. MindWork Software, 100 Pacific St., Monterey, CA 93940. NCP (Mar 87)

QuickWord is a word processing accessory that adds sophisticated glossaries to *MacWrite*. Simple to install and use, yet powerful and efficient. $49.95. EnterSet, 2380 Ellsworth, Berkeley, CA 94720. NCP

Scriptor is designed for producing standard format scripts. Starts with a *Word* document. As you change your *Word* document, *Scriptor* will reformat, renumber and reprint the script. Supports LaserWriter and daisywheel printers. $295. Screenplay Systems, 348 E. Olive Ave., Suite F, Burbank, CA 91502. NCP (May 87)

Spelling Champion is a fast and accurate batch-type spelling checker. Backup feature allows you to undo corrections in a paragraph. Works only with *MacWrite* 4.5. $39.95. Champion Software, 6617 Gettysburg Dr., Madison, WI 53705. NCP (Oct 86)

Spellswell is an effective and powerful standalone spelling checker. It has many advanced features such as capitalization and homonym checking and comes with a large, well-chosen dictionary. Very good dictionary, good value. $74.95. Working Software, Inc., 321 Alvarado, Ste. H, Monterey, CA 93940. NCP (May 86)

Thunder! is one of the best spelling checkers around. Features Learned Words (a superb glossary) and statistics. A very fast DA, it works interactively and in selection mode. Requires 512K+. $49.95. Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404. NCP (Dec 86)

Word 3.0 is the most feature laden word processor now available. Has a spelling checker, hyphenation, some page layout, style sheets and more. Also has Microsoft's somewhat unusual view of what the Mac interface is. Requires 512K+ and 1200K+ of storage. $395. Microsoft, 16011 NE 36th Way, Redmond, WA 98073-9717. NCP (Mar 87)

WorksPlus Spell is a speedy spelling and hyphenation checker for *Microsoft Works*. It includes a glossary for abbreviations and time/date stamping. The biggest drawback is its limitation to one program. $59.95. Lundeen & Associates. PO Box 30038, Oakland, CA 94604. NCP (Oct 87)

WriteNow for the Macintosh has many of the features of *MacWrite* and then some, including the ability to work in columns. Has built-in spelling checker with 50,000-word dictionary. $175. T/Maker, 1973 Landings Dr., Mountain View, CA 94043. NCP (Mar 87)

ORGANIZATIONAL TOOLS

Acta is an outline processor in desk accessory format. It has practically all the power of a standalone program, and then some. Can save files as *Acta* outlines, *MacWrite* or text files. A must-have for those who do outlining. $59.95. Symmetry, 761 E. University Dr., Mesa, AZ 85203. NCP (Jul 86)

Calliope is a new type of outlining program. Chunks of information are manipulated as small "light bulbs" containing text. Related elements can be graphically connected, and their text information viewed in hierarchical order. Text files can be created for *MacWrite* editing. $99. Innovision, PO Box 1317, Los Altos, CA 94023. NCP (Sep 86)

Comment (previously known as *Memorandum*) is the electronic equivalent of Post-It Notes. Notes can be attached to many different types of documents. Doesn't work well with *SuperPaint* or *Microsoft Works*. An alarm clock feature alerts users to Timed Notes. $99.95. Deneba Systems, 14206 SW 136th St., Miami, FL 33186. NCP (Nov 87)

DecisionMap organizes data to facilitate decision making. Unique weighting abilities make this a powerful tool. The decision analysis process is long and sometimes complex, but never

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difficult. $145. SoftStyle, 7192 Kalanianole Hwy., Honolulu, HI 96825. CP

Design is a powerful organizational tool. It goes beyond mere ★★★★ flowcharting. Complex, detailed program aimed at software pros. $250. Meta Software, 150 CambridgePark Dr., Cambridge, MA 02140. NCP (Apr 87)

Guide allows you to "cross reference" from within a document ★★★★½ using hypertext. You can set up words or sections of the document so that double-clicking brings up explanatory material, graphics and other useful items. The word processing and formatting functions, however, are limited. $135. OWL International, 14218 NE 21st St., Bellevue, WA 98007. NCP (Apr 87)

MacProject allows a user to plan and track a project from ★★★ beginning to end. Uses CPM to produce schedules with start and finish dates for each task. Can report on resource interdependencies and generate all needed printed reports. $195. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Mar 86)

MacSpec is a specification writing tool, a cross between word and ★★★ outline processors. Can automatically number and indent headings, and renumber everything when lines are moved. Text under headings is handled and formatted as though in a simple word processor. HFS-compatible. $199.95. LM Software, PO Box 93, Belmont, CA 94002. NCP (Oct 86)

Micro Planner Plus is a great project management system. ★★★★½ Outstanding analysis capability. Memory based, making it much faster than the original. Includes a font menu. Even saves reports out in *MacDraw* format for further work. $495. Micro Planning International, 235 Montgomery St., San Francisco, CA 94104. NCP (Dec 86)

MORE is an incredibly powerful outline processor with gobs of ★★★★★ great features: instant charts, math capabilities, multiple windows, font and style control, templates and more. Prints outlines in any of several standard formats, even in color. Requires 512K+. $295. Living Videotext, 117 Easy St., Mountain View, CA 94043. NCP (Jan 87)

PowerPoint is a comprehensive presentation creation tool. Han- ★★★★ dles 35mm slide and overhead transparency formats. Good graphics and text editing capabilities. Requires 512K+. $395. Forethought, 250 Sobrante Way, Sunnyvale, CA 94086. NCP (Aug 87)

ThinkTank 512 is a very fast and intuitive organizational tool. Full ★★★½ keyboard control is possible. Can store and paste graphics into outlines. Slide show features allows high-quality presentations to be created. Good report formatting and printing capability. $195. Living Videotext, 117 Easy St., Mountain View, CA 94043. CP (Jan 86)

Voila! is a full-featured outliner in desk accessory format. Head- ★★★★ lines can be edited like normal text. Reads and writes text files, *Word*, *MacWrite*, *ThinkTank* and *MORE* documents. An excellent value. Requires 512K+. Mac XL not supported. $99.95. Target Software, 14206 SW 136th St., Miami, FL 33186. NCP (Mar 87)

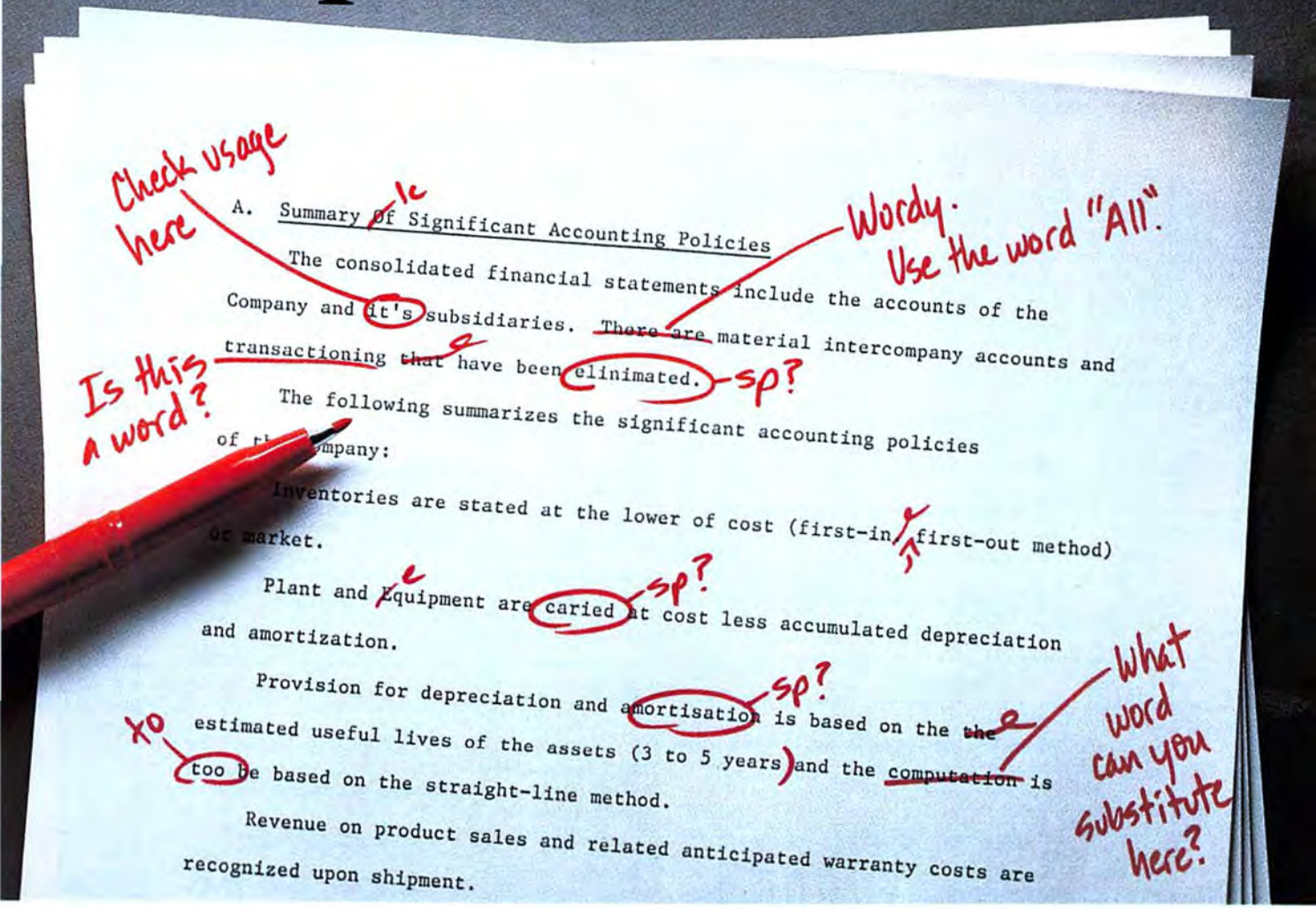
DESK MANAGERS

BatteryPak is a set of 9 handy desk accessories including ★★★★★ scientific and RPN calculators, a background text file printer and a 250-page note pad with search and phone dialing capabilities. $49.95. Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404 NCP (Dec 85)

Executive Office is a jack of all trades office application. Good ★★★½ data base, word processing, graphics and minispreadsheet. Available on 400 or 800K disks; get the 800 if you can. $249.99. DataPak, 14011 Ventura Blvd., Sherman Oaks, CA 91423. CP (Mar 87)

Front Desk lets small businesses and offices easily keep track of ★★★ personnel schedules, activities and payments. The program can keep track of up to 15 employees, functioning as a day-, week- and month-at-a-glance calendar. $149.95. Layered, 85 Merrimac St., Boston, MA 02114. NCP (Dec 85)

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Automated Language Processing Systems

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My Office lets you handle your files and papers in much the same way you did before you got a computer. Excellent use of graphic symbols. $129.95. DataPak, 14011 Ventura Blvd., Sherman Oaks, CA 91423. CP (Prem)

Quickset is a set of desk management and organizational tools that can be used as desk accessories or applications. Functions include note filer, card filer, calendar, phone dialer, financial and statistical calculators and a file encryptor. $49.95. EnterSet, 2380 Ellsworth, Berkeley, CA 94720. NCP (Dec 85)

SideKick 2.0 beefs up original *SideKick* DAs and adds two major new ones—*MacPlan*, (formerly *Click-On Worksheet*) and *Outlook*, a full-featured outliner. Also comes with seven applications to support the desk accessories. $99.95. Borland International, 4585 Scotts Valley Dr., Scotts Valley, CA 95066. NCP (Jun 87)

Smart Alarms is the best reminder system for the Mac. Easy to use, versatile and, well, smart. This self-running DA automatically reminds you of anything you enter into its Reminder file, giving you a wide range of useful advance warning options. $49.95. Imagine Software, 19 Bolinas Rd., Fairfax, CA 94930. NCP (Oct 86)

Top Desk is a set of 7 self-installing (and self-removing) DAs. Menu Key adds Command key sequences to programs; View allows looking at and moving data between up to 8 *MacWrite* documents; also included are BackPrint, Touch 'n' Go, Blank, Encrypt and Launch. $59.95. Cortland Computer, PO Box 9916, Berkeley, CA 94709. NCP (May 86)

UTILITIES

Accessory Pak 1 is a set of useful applications and utilities. *Paint Cutter* alone is worth the price. That program allows users to browse and manipulate full page *MacPaint* documents. $39.95. Silicon Beach, PO Box 261430, San Diego, CA 92126. NCP (Nov 85)

Copy II Mac does efficient sector and bit copies and in its latest version can back up virtually all Mac software. Features graphic displays of copy progress. Comes with *MacTools*, a multi-use utility that can recover many damaged files. $39.95. Central Point Software, 9700 SW Capitol Highway, Portland, OR 97219. NCP (Apr 86)

DiskExpress unfragments disk volumes by reorganizing data into continuous sectors and arranging files to slow down further fragmentation. Works with *MacServe*, floppy drives and most hard drives. Requires 512K+. $39.95. ALSoft, Box 927, Spring, TX 77383. NCP (Feb 87)

DiskFit is a utility for backing up and restoring hard disk files. Creates a "SmartSet" of floppy disks so incremental backups only update files modified since the last backup procedure. Backs up to floppies or another hard disk. Requires 512K+. $74.95. SuperMac Software, 295 N. Bernardo Ave., Mountain View, CA 94043. NCP (Jun 87)

Disk Librarian is an easy to use shareware cataloguing program. Criteria selection option for generating subcatalogs. Requires 512K+. $20. Little Bit, 469 Edgewood Ave., New Haven, CT 06511. NCP (Apr 87)

Disk Ranger is a speedy cataloguing program that doubles as an efficient labelmaker. Comes with pinfeed labels. Works with regular and hard disks. Can catalog HFS systems. $34.95. Graham Software Company, 8609 Ingalls Circle, Arvada, CO 80003. NCP (Mar 86)

DiskTop 2.0 is a desk accessory *Finder* replacement of extraordinary power and ease of use. Comes with the useful *LaserStatus* DA and *Widgets* application. The extras alone are worth the price. Requires 512K+. Upgrade from version 1.0, $7; $10 with new manual. $39.95. CE Software, 801 73rd St., Des Moines, IA 50312. NCP (Aug 87)

Dubl-Click Calculator Construction Set lets users design personalized calculators with a variety of standard and special functions. Finished calculators can be saved as installable desk accessories or as clickable applications. $59. Dubl-Click Software, 18201 Gresham St., Northridge, CA 91325. NCP (Apr 86)

Fedit Plus is the file and disk editor for everyone, from newest Mac owner to oldest. It can do more for your disks and files than any other application. Can recover deleted MFS files. If you own a Mac, get it. HFS-compatible. $49.95. MacMaster Systems, 108 E. Fremont Ave., #37, Sunnyvale, CA 94087. NCP (Sep 86)

Findswell is an indispensible utility that installs a new button in the Open Dialog box of virtually every Macintosh application. Press the button, type a search string, press Find and *Findswell* searches for any files that match. Click Open or double-click to open the correct file. $49.95. Working Software, 321 Alvarado, Monterey, CA 93940. Requires 512K+. NCP (Nov 87)

FlashBack is a utility to back up HFS hard disks onto floppies. A unique graphic display of the HFS directory facilitates file selection. The program can handle files larger than 800K. $59.95. Mainstay, 5311B Derry Ave., Agoura Hills, CA 91301. NCP (Nov 86)

Glue adds a print-to-disk capability to many programs. *ImageSaver* installs as printer driver, *Viewer* allows copying and printing of *Glue* files. Handy utility for desktop publishers. $59.95. Solutions International, Box 989, Montpelier, VT 05602. NCP (Dec 86)

Hard Disk Util uses patch files to allow users to mount and run specified programs on their hard disks. The list of patches is constantly expanding. $89.95. FWB Software, 2040 Polk St., San Francisco, CA 94109. NCP

HFS Backup ranks as one of the preferred hard disk backup utilities. Back up by file/folder or last changes. Backup specifications can be saved as templates. Good graphic interface. Reliable program. $49.95. PCPC, 6204 Benjamin Rd., Tampa, FL 33614. NCP (Dec 86)

HFS Locator Plus is *the* essential HFS desk accessory. It can search for a file by name or date of creation, create folders, move files from one folder to another, set a program to launch while in an application. $39.95. PBI Software, 1163 Triton Dr., Foster City, CA 94404. NCP (Sep 86)

LabView automates the repetitive task of controlling laboratory instruments. Rich icon-based language allows flow chart type programming, but response is slow. Requires 512K+. $1995. National Instruments, 12109 Technology Blvd., Austin, TX 78727. NCP (Aug 87)

LaserServe is a printer spooler for AppleTalk networks. After installation all operations done via a desk accessory. Works with both *MacServe* and *TOPS*. Requires 512K+ and 800K drive or hard disk. $95 per node. Infosphere, 4730 SW Macadam Ave., Portland, OR 97201. NCP (Feb 87)

Mac Disk Catalog II is a utility that will quickly organize a moderate size disk library. Easy to use with powerful reporting and label-making features. $49.95. New Canaan MicroCode, 136 Beech Rd., New Canaan, CT 06840. NCP (Dec 85)

MacFlow is a design tool created for programmers. Traditional flowcharting symbols are linked together, and a symbol can be connected to a separate flowchart file. Symbols can't be edited, precluding using *MacFlow* for other applications. $125. Mainstay, 5211-B Derry Ave., Agoura Hills, CA 91301. NCP (Apr 87)

MacInUse tracks time spent in applications and saves info as text files. Installs on any disk, works in background. MFS, HFS compatible. Extremely valuable for tax purposes, client records, etc. $79. SoftView, 4820 Adohr Lane, Camarillo, CA 93010. NCP (Jan 87)

MacLabeler lets users instantly index and print labels for all the disks in a burgeoning collection. Choose border type and orientation of your label; index by folder or document. Starter set of labels is included. $49.95. Ideaform, PO Box 1540, Fairfield, IA 52556. NCP (Prem)

MacNosy is a global disassembler. A very advanced user can use this program to look into the code of virtually any program.

MINIFINDERS

This advanced tool can take you places no other Mac program could dream of going IF you have the skill to guide it. The documentation is sparse. For pros only. $90. Jasik Designs, 343 Trenton Way, Menlo Park, CA 94025. NCP

Mac + II lets you run Apple II software on the Mac. Emulation ★★★ speed is only 35 to 45 percent of a real Apple II, so graphics especially suffer. Games also run slow. Runs AppleWorks (Apple II integrated software). Good for ex-Apple II owners who have large software collections. $149.95. Meacom, PO Box 272591, Houston, TX 77277. CP

MacSafe is a data file security program that allows you to place ★★★★ multiple files into a "safe," and then you can further protect them through two types of encryption (including DES). Flexible and very easy to use. Allows for installation on hard disk. $149.95. Kent Marsh Limited, Inc., 1200 Post Oak Blvd., Houston, TX 77056. CP (Mar 87)

MacServe converts a Mac and a hard disk into a disk and print ★★★★½server. Uses the AppleTalk network and is easily hooked up. Users can partition the hard disk into multiple volumes. Runs in the background, so users can work on all machines in the network. $250. Requires 512+ or Mac XL. Infosphere, 4730 SW Macadam, Portland, OR 97201. CP

MacZap is a three-part disk and memory utility. It can be used to ★★★★ recover some damaged files and disks, compare disks, analyze disk structure and make back-up copies of most disks. $60. Micro Analyst, 2505 Roxmoor, Austin, TX 78723. NCP (Jan 86)

Menu Fonts displays the names of fonts in the acutal font instead ★★★ of standard Chicago. Won't work with programs that have a nonstandard Font menu or no Font menu. Comes with *LockOut*, a utility that gives password access to your Mac, and *FastFormatter*, a utility for formatting multiple blank disks. Requires 512K+. $15. Beyond Software, 3865 N. Oracle Rd., Tucson, AZ 85705. NCP (Jul 87)

myDiskLabeler is an excellent label maker. It can read directo- ★★★★ ries, and use large or small icons or anything desired. Comes with 54 precut labels. $44.95; with color printing ability (on the ImageWriter II), $54.95; with PostScript font capability (on the LaserWriter), $64.95. Williams and Macias, PO Box 19206, Spokane, WA 99219. NCP (Aug 87)

'Ncryptor is a simple, safe program that lets users password their ★★★★ files. The same program is used for encoding and decoding. This is one of the best products in its category. $39.95. Mainstay, 5311B Derry Ave., Agoura Hills, CA 91301. NCP

Packit III is an essential utility. Primarily used to temporarily ★★★★½"glue" files together, it can also compress and encrypt. Feeware. $10, $10 for printed manual. Harry R. Chesley, 1850 Union St., San Francisco, CA 94123. NCP (Jan 87)

Printworks for the Mac is a comprehensive software-based dot- ★★★★ matrix printer control system. Optimizes printing from different applications. Easy to use. Requires 512K+. $75. SoftStyle, 7192 Kalanianaole Highway, Honolulu, HI 96825. NCP (Aug 87)

Programmer's On-line Companion puts an abridged version of ★★★ *Inside Macintosh* in your system for reference. Simply read the text or transfer some or all of it directly into your normal editing window. Non-Macish interface makes the program confusing, somewhat difficult to use. $34.95. Addison-Wesley, Route 128, Reading, MA 01867. NCP (Jul 87)

Quick & Dirty Utilities, Volume One is a disk full of handy ★★★★½programs. Several desk accessories include a menu bar clock and a terminal. $39.95. Dreams of the Phoenix, PO



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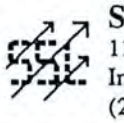
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Box 10273, Jacksonville, FL 32247. NCP (Nov 85)

RamSnap is a RAMdisk and disk cache in one easy to use ★★★★ package. Can store multiple configurations as files. Good product but a little pricey. $59.95. Dove Computer Corp., 1200 North 23rd St., Wilmington, NC 28405. NCP (Jun 87)

SmartScrap and The Clipper are two useful desk accessory ★★★★½ utilities for graphics work. *SmartScrap* is a major enhancement to the standard Scrapbook DA. *The Clipper* provides you with a transparent Clipboard window, allowing you to resize or crop a graphic to the area that it will be pasted to. $59.95. Solutions International, PO Box 989, Montpelier, VT 05602. NCP (Jul 87)

Stepping Out is a software virtual screen extender. Lets you ★★★★½ create a screen as large as memory allows. 9" screen is a "view" to larger screen. Also has reduction features. Amazing. $95. Berkeley System Design, 1708 Shattuck Ave., Berkeley, CA 94709. NCP (Jun 87)

Suitcase is a transparent program that automatically lets you use ★★★★★ all your fonts and DAs. Foolproof and indespensible. Comes with *Pyro!*, the best screen saver. Requires 512K+. $49.95. Software Supply, 599 N. Mathilda, Sunnyvale, CA 94086. NCP (Nov 87)

SuperLaserSpool is a LaserWriter spooler. Very fast because it ★★★★ does conversion to PostScript in the background, but doesn't print a faithful rendition of *PageMaker* documents as a result. $149.95 single user, $395.95 for up to five users on one network. SuperMac Software, 950 N. Rengstorff Ave., Mountain View, CA 94043. NCP (Jun 87)

Switcher is Andy Hertzfeld's contribution to Mac productivity. This ★★★★★ program lets users run several programs at once (up to 8 on a 1-megabyte or larger machine). Switching between the programs is near instantaneous. Requires 512K+. $19.95 from Apple, free from BBSs, included with some third-party applications. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP (Jun 86)

Tempo is a desk accessory that allows most Mac commands to be ★★★★ intelligently recorded and played back. Capabilities include pausing, conditional branching and macros that work between applications. $99. Affinity Micro Systems, 1050 Walnut St., Boulder, CO 80302. NCP (Jul 86)

TMON is *the* debugger for the Mac. This isn't open to question. ★★★★★ *TMON* is simply the best. Comes with the latest version of Darin Adler's Extended User Area. $100. ICOM Simulations, 626 Wheeling Rd., Wheeling, IL 60090. NCP

Turbo Download is a desk accessory designed specifically to ★★★★½ increase the speed of Xmodem data transfers from national data bases to your Mac. Speed increases range upward from 50% to over 300% at 2400 baud. $39.95. Mainstay, 5311B Derry Ave., Agoura Hills, CA 91301. NCP

Twelve-C Financial Desk Accessory brings all the power and ★★★★ functionality of a Hewlett-Packard 12C programmable calculator to your desktop. Can be programmed and all registers can be viewed while calculator is running. $39.95. Dreams of the Phoenix, PO Box 10273, Jacksonville, FL 32247. NCP

II in a Mac is a graphically oriented Apple II emulator with unique ★★★ features, such as text and graphics copy from Apple screen to Mac Clipboard. Suffers speed problems associated with "virtual machine" emulation. $69. Micro-W Distributing, 1342B Route 23, Butler, NJ 07405. CP

TypeNow is a desk accessory that allows the Mac and ImageWriter ★★★★ to function as an electronic typewriter. Type can be placed into blanks in complex forms easily. Typing can be recorded and played back. $39.95. Mainstay, 5311B Derry Ave., Agoura Hills, CA 91301. NCP (Jan 86)

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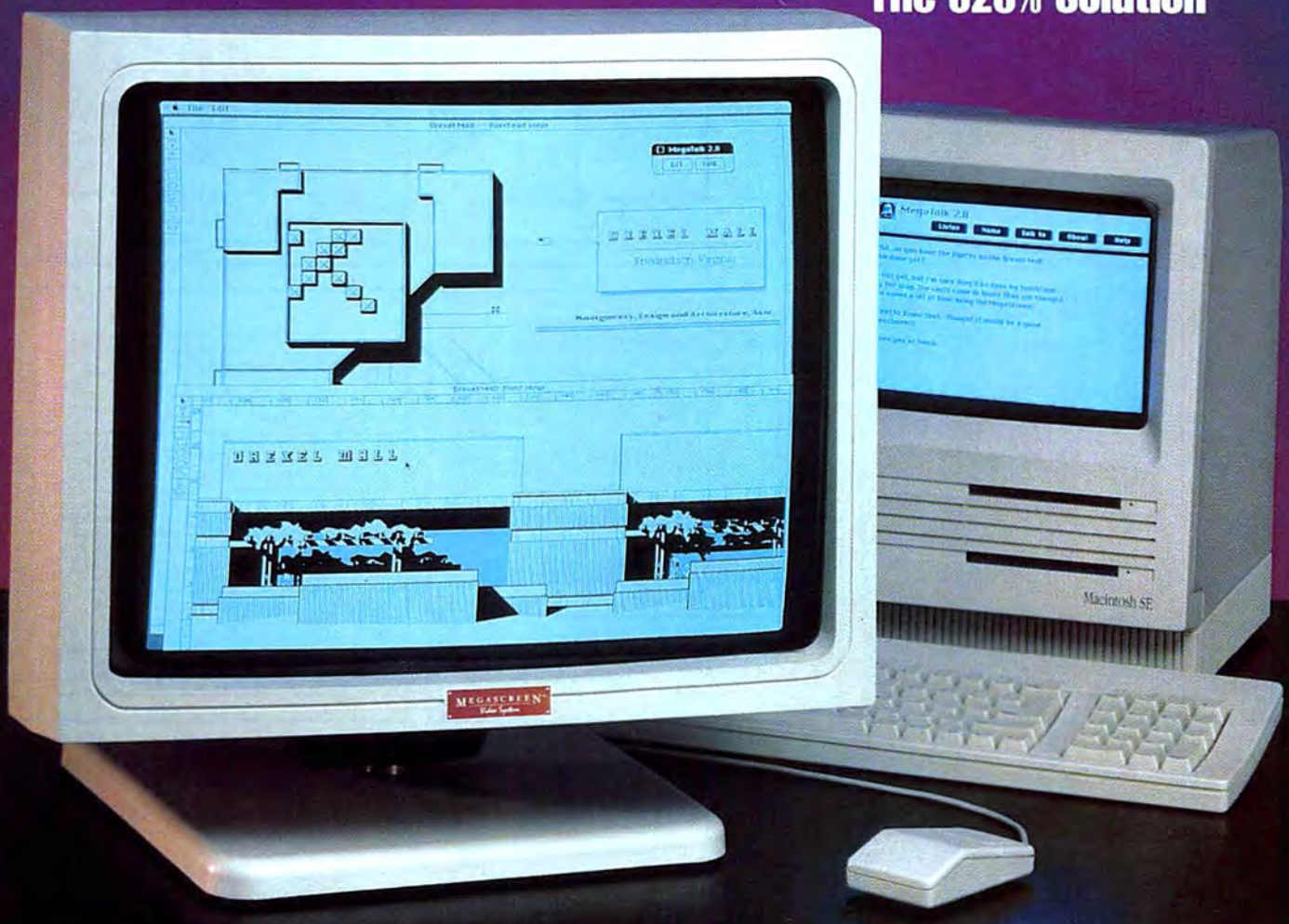
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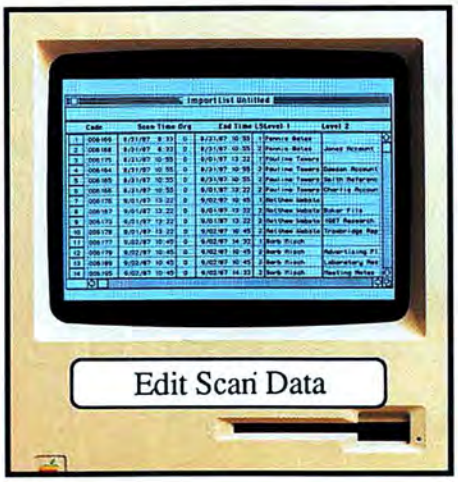
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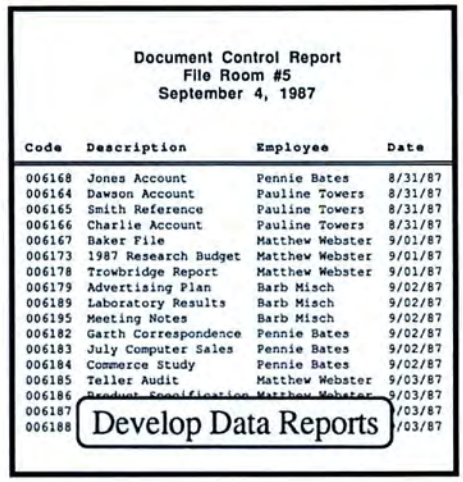












Document Control Report
File Room #5
September 4, 1987

Code	Description	Employee	Date
006168	Jones Account	Pennie Bates	8/31/87
006164	Dawson Account	Pauline Towers	8/31/87
006165	Smith Reference	Pauline Towers	8/31/87
006166	Charlie Account	Pauline Towers	8/31/87
006167	Baker File	Matthew Webster	9/01/87
006173	1987 Research Budget	Matthew Webster	9/01/87
006178	Trowbridge Report	Matthew Webster	9/01/87
006179	Advertising Plan	Barb Misch	9/02/87
006189	Laboratory Results	Barb Misch	9/02/87
006195	Meeting Notes	Barb Misch	9/02/87
006182	Garth Correspondence	Pennie Bates	9/02/87
006183	July Computer Sales	Pennie Bates	9/02/87
006184	Commerce Study	Pennie Bates	9/02/87
006185	Teller Audit	Matthew Webster	9/03/87
006186	Product Specification	Matthew Webster	9/03/87
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006188			/03/87

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MINIFINDERS



LANGUAGES

AAIS Prolog is a fast standard Prolog with excellent debugging and error handling. Good for serious program development. Documentation is not as good as the program. $150. Advanced AI Systems, PO Box 39-0360, Mountain View, CA 94039-0360. NCP (Mar 87)

Aztec C is a C language that will appeal to users with a UNIX background. It uses many UNIX conventions and in the more expensive versions comes with standard UNIX utilities, including the VI editor. $75 beginners, $199 basic system, $299 development system, $499 commercial system. Manx Software Systems, PO Box 55, Shrewsbury, NJ 07701. NCP (May 86)

Basic Compiler is the long awaited compiler for *Microsoft BASIC*. The interface is unfriendly, but it gets the job done. Compiled programs run faster, but you can still tell they are written in BASIC. $195. Microsoft, 16011 NE 36th Way, Redmond, WA 98073-9717. NCP (May 87)

ExperCommon Lisp is a LISP development system. Not fully Common LISP compatible, but creates good compiled code and standalone applications. Requires 1M+. $995. ExperTelligence, 559 San Ysidro Rd., Santa Barbara, CA 93108. NCP (Aug 87)

ExperLISP is a useful programming language for high-level programmers. The more you use it, the more you'll figure out about it. $495. Requires 512K+. ExperTelligence, 559 San Ysidro Rd., Santa Barbara, CA 93108. CP

ExperLogo is a version of the popular teaching language, Logo. Features three-dimensional graphics using "bunnies" rather than usual "turtles." Very speedy, smooth program. Comes with an excellent manual. $149.95. ExperTelligence, 559 San Ysidro Rd., Santa Barbara, CA 93108. CP

ExperProlog II is a Prolog based on the new Prolog II standard. Has the ability to handle infinite trees and allows user-defined functions that operate conditionally. Documentation is not the best and Mac interface is nonstandard. $495. ExperTelligence, 559 San Ysidro Blvd., Santa Barbara, CA 33108. NCP (Mar 87)

Lightspeed C provides an integrated environment for developing desk accessories, applications and code resources in C. The editor works with the compiler for searches and file management. Can get awkward if you need something outside the environment. $175. Think Technologies, 135 South Rd., Bedford, MA 01730. NCP (Apr 87)

Lightspeed Pascal is a fast, powerful development system for Pascal programming. Fully integrated Mac-like environment. Requires 512K+. $125. Think Technologies, 135 South Rd., Bedford, MA 01730. NCP (Feb 87)

LPA MacProlog is a flexible program that supports several Prolog syntaxes, producing a rich programming environment. However, the program's implementation and documentation are both poor. $295. Programming Logic Systems, 31 Crescent Dr., Milford, CT 06460. NCP (Mar 87)

MacAsm is a software development system that allows programs to be written in assembly language. Programmers can assemble, edit and test software, and an integrated resource compiler lets independent applications run from their own icons. $125. Mainstay, 5311B Derry Rd., Agoura Hills, CA 91301. NCP

Mac C is a good, highly Mac-oriented implementation of this popular development language. Assembler and linker includ-

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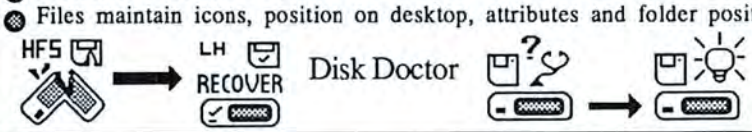
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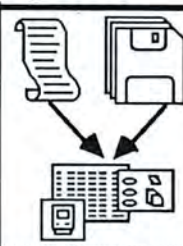


MFS Support Also

Disk Clinic is recommended by the Major SCSI manufacturers as THE program to use for recovering crashed hard disks. We support ALL HFS systems such as Floppies, Hard Disks, and Net Servers like MacServe™!!
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ed. $425. Consulair, 140 Campo Dr., Portola Valley, CA 94025. NCP

MacExpress is a development environment or shell. Programmers ¢¢¢ use it to save time and effort when developing standalone applications for the Mac. $195. ALSoft, PO Box 927, Spring, TX 77383. NCP (Feb 86)

MacForth Plus is an excellent implementation of the popular Forth ¢¢¢¢ programming language. New, reduced price, $199. Creative Solutions, 4701 Randolph Rd., Rockville, MD 20852. NCP

Mach II is a multitasking implementation of Forth that allows local ¢¢¢¢ variables and text files. Can create standalone applications. Several windows can be up with different operations in each, operating concurrently. Execution is fast. $99.95. Requires 512K. Palo Alto Shipping, PO Box 7430, Menlo Park, CA 94026. NCP (Apr 86)

Macintosh 68000 Development System is a fairly traditional ¢¢¢¢ assembly language package. The two-disk set provides an editor (*Edit*), an assembler, a linker, an executive and a resource compiler. $195. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. NCP

Macintosh Pascal is Apple Computer's version of this very popular ¢¢¢ programming language. Loaded as it is with innovative teaching features, this interpreter is an excellent introduction to Pascal. $125. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. CP

MacScheme is a LISP dialect with "artificial intelligence" capabili- ¢¢¢ ties. Has a large appetite for RAM. Interpreted language with Toolbox access limited to a small part of QuickDraw. $125. Semantic Microsystems, 4470 S W Hall St., Beaverton, OR 97005. NCP (Jun 86)

MacScheme+Toolsmith is a Mac version of Scheme, a LISP ¢¢¢¢¢ dialect. Beautiful implementation, marred only by relative slowness compared to similar products. Get *Toolsmith*. Requires 1M+. $395. Semantic Microsystems, 4470 S W Hall, Beaverton, OR 97005. NCP (Aug 87)

Megamax C is an easy to use, full version of C. Has a compiler, ¢¢¢¢ linker, disassembler, editor and much more. Good for beginners. Excellent documentation. $299.95. Megamax, PO Box 851521, Richardson, TX 75085. NCP

Microsoft BASIC was the Mac's first programming language. This ¢¢¢¢ interpreter (it's not a compiler) now supports the Toolbox and the whole Mac interface can be implemented in your programs. For nonprogrammers there are lots of programs available to run. $99. Microsoft, 16011 NE 36th Way, Redmond, WA 98073-9717. NCP

MIDIBasic is a library of simple, but highly useful routines for ¢¢¢¢ writing MIDI software. Good stuff. Sketchy documentation. Works with both *Microsoft* and *ZBasic*. Requires 512K+ plus Basic. $49.95. Altech Systems, 831 Kings Highway, Shreveport, LA 71119. NCP (Aug 87)

Object Logo is an object-oriented programming language with ¢¢¢¢ access to the Toolbox. Good product, but can't produce standalone applications. Requires 512K+. $79.95. Coral Software, PO Box 307, Cambridge, MA 02142. NCP (Aug 87)

Personal Prolog is an inexpensive and well-documented program. ¢¢¢¢ Has no debugging or search and replace facilities, making it a more appropriate tool for learning than development. Documentation and use of Mac interface are excellent. $64.95. Optimized Systems Software, 1221 B Kentwood Ave., San Jose, CA 95129. NCP (Mar 87)

Prolog/m is a solid Prolog following the Edinburgh standard. Has ¢¢¢¢ extensive debugging facilities, but you'll need separate *Toolbox* disk with 58 additional predicates. Drawback: no true editing or printing facilities. $99.95. Chalcedony Soft-



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One of the best games for the Macintosh just got better! *The Dungeon of Doom* received a 4-mice rating in **MacUser.** Its review noted that "the look and sound are still far above" similar bestsellers. But that was *The Dungeon of Doom... The Dungeon Revealed* has all the best features from "*D of D*," and many more: •Digitized sound •A great new look •Deadly new monsters •Scroll-bar adjustable volume •Transfer to other applications •One-screen list of your loot inventory •Hidden vaults. You still have forty levels to explore, keyboard commands, access to desk accessories, on-screen help, and seven character classes to choose from. You also have QuickDraw Mode, which creates a movable window on a big screen.

The Dungeon Revealed comes with a player's guide, but *The Carnos Chronicles* offers a wealth of additional hints. Why *The Dungeon Revealed*? Because the source code is also available (to registered buyers of the game)! All this, just in time to make a great holiday gift for your favorite Mac user...like yourself?

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•The Dungeon Revealed Source Code, $45.00

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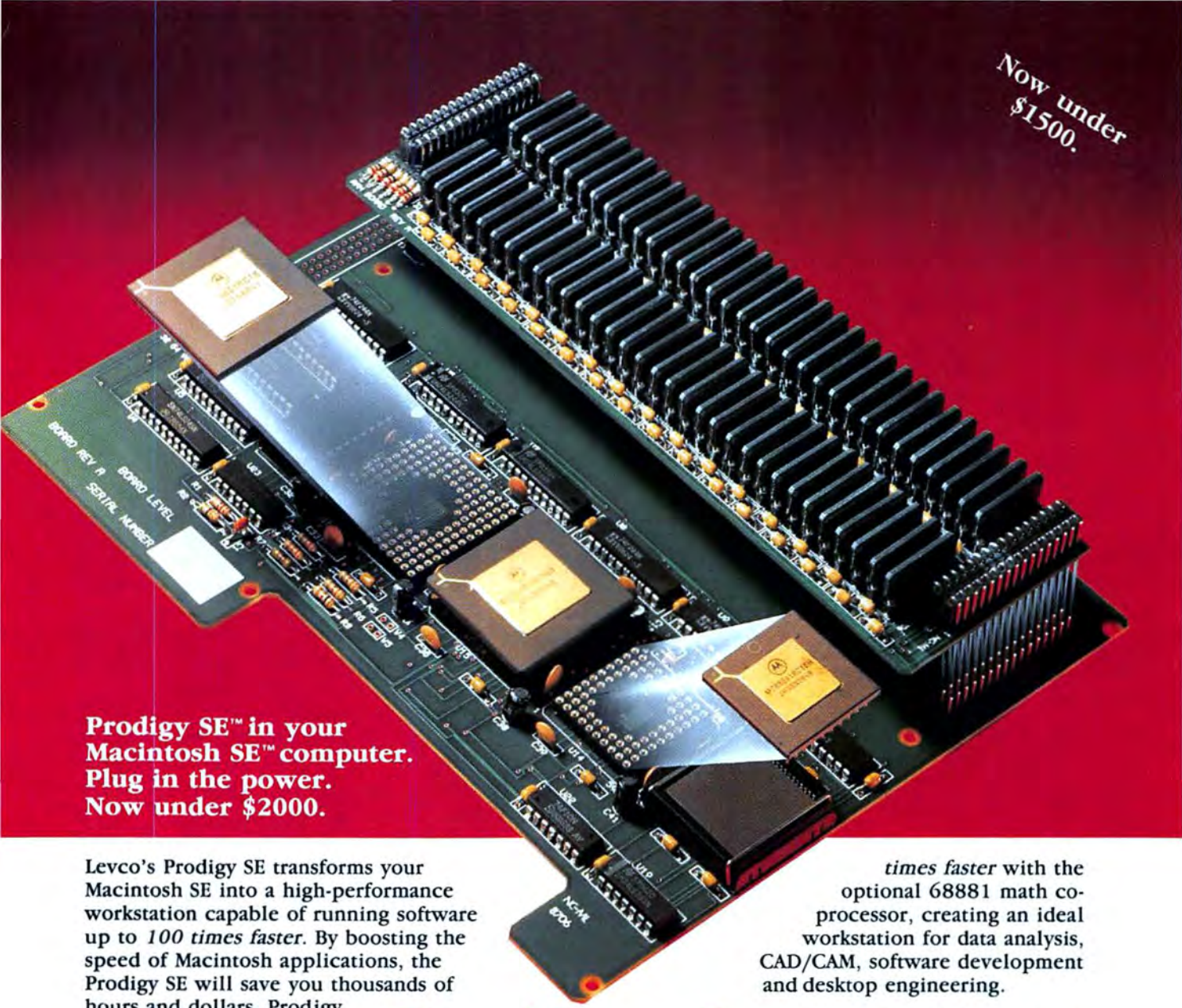
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MINIFINDERS

ware, 5580 La Jolla Blvd., La Jolla, CA 92037. NCP (Mar 87)

QUED (Quality Editor for Developers) is the ultimate source ♦♦♦♦ code editor. Loaded with useful and well thought out features, it will make any programmer's life much easier. It is not a word processor, however. $65. Paragon Concepts, 4954 Sun Valley Rd., Del Mar, CA 92014. NCP (Mar 86)

TML Data Base Toolkit is an ISAM type data base that provides ♦♦♦♦ fast and efficient administration of large data files in applications developed with *TML* compiler. Supports multiple open index files. $89.95. TML Systems, 4241 Bay Meadows Rd., Jacksonville, FL 32217. NCP (Dec 86)

TML (MacLanguage Series) Pascal is a good Pascal compiler, ♦♦♦♦♦ capable of producing standalone programs. Can use most existing Lisa Pascal programs with only slight modification. Requires 512K. $99.95. TML Systems, 4241 Bay Meadows Rd., Jacksonville, FL 32217. NCP (Jun 86)

TML Source Code Library shows how to write programs that use ♦♦♦♦½ custom definition routines, speech, serial drivers, split bars and other topics. Provided on three 400K diskettes. Requires *TML Pascal*. $79.95. TML Systems, 4241 Bay Meadows Rd., Jacksonville, FL 32217. NCP (Dec 86)

Visual Interactive Programming is a unique visual programming ♦♦♦♦ system for creating simple Macintosh applications. Programs are constructed in a flowchart-type manner. Easy access to most toolbox routines. Poor printing control. $124.95. Mainstay, 5311-B Derry Ave., Agoura Hills, CA 91301. NCP (Jun 87)

ZBasic is a fast, interactive compiler capable of creating stand- ♦♦♦♦ alone applications that takes advantage of Mac's unique features and abilities. Includes *Edit*, *RMaker* and *MacInTalk*. Requires 512K. $89.95. Zedcor, 4500 E. Speedway Blvd., Tucson, AZ 85712. NCP (Dec 86)

EDUCATION

ChipWits is a combination game and teaching tool. Players create ♦♦♦½ programs to maneuver robots through a set of 8 mazes. The programs are written in *ChipWit*'s built-in icon-based programming language (IBOL). $49.95. BrainPower, 24009 Ventura Blvd., Calabasas, CA 91302. NCP

Course Builder (version 2.0) creates standalone educational ♦♦♦♦ applications. An easy-to-learn dedicated programming language uses blocks and arrows. Graphics, animation and sound can be integrated. Version 2 allows mathematical calculations. Poor documentation. $395, plus $10 shipping. TeleRobotics International, 8410 Oak Ridge Highway, Knoxville, TN 37931. NCP (Oct 87)

KidsTime is a package of five quality educational programs for ♦♦♦♦ children between the ages of 3 and 12. The programs all have adjustable difficulty levels. Some use speech and one is a nice introduction to musical notes. Sparse documentation. $49.95. Great Wave Software, 5353 Scotts Valley Dr., Scotts Valley, CA 95066. NCP (Oct 86)

MacEdge and **MacEdge II** each contain 8 reading or math drill ♦♦♦ programs for basic skills. Programs follow one of three formats, a bit contrived. Contrivances are design flaws. $49.95 each. Think Educational Software, 16 Market St., Potsdam, NY 13676. CP

MacType offers structured typing instruction. Can teach both ♦♦♦♦ standard and Dvorak keyboards. Features include certificates for reaching certain levels. Can be used in a multistudent environment. $49.95. Palantir Software, 12777 Jones Rd., Houston, TX 77070. CP

MasterType is proof that learning to type can be fun. In this ♦♦♦ arcade-style action game words descend from four corners

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MINIFINDERS

towards the center ship; the user must type them correctly. Features 18 skill levels, tracks errors, recommends lessons and provides comparison scores. $49.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. CP

ENTERTAINMENT

A Mind Forever Voyaging is a departure in text adventure games. ★★★★ It has a more extensive vocabulary and a more involved story than most of the genre. The story here is gripping, but there are only a few puzzles to solve. Requires 512K+. $39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. NCP (Apr 86)

Alter Ego simulates the entire lifetime of a fictional character. The ★★★ player's reaction to each multiple-choice event shapes the character's future relationships, job, health, etc. Spectacular the first time you play; after that there are too many similarities to previous characters. $59.95. Activision, PO Box 7287, Mountain View, CA 94039. CP (Jun 86)

The Ancient Art of War gives users a chance to refight some ★★★★½famous campaigns on both strategic and tactical levels. Campaigns can also be designed from scratch. Very playable, addicting game. Requires 512K+ Mac. $44.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP (Apr 86)

Archon pits the forces of Light against Dark in a quest to gain ★★★★½control of five Power Points on a checkerboard grid. The shifting cycles of squares' colors keeps the balance of power ever-changing. One or two players. $39.95. Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404. CP (Oct 86)

Balance of Power is the world's first computer peacegame. This ★★★★★ simulation allows players to become either the President of the United States or General Secretary of the Soviet Union. Extraordinary artificial intelligence routines and general play make this a classic. $49.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60022. CP (Prem)

Battle Stations is a deceptively simple game based on the pen ★★★★ and paper game of *Battleship*. Requires strategy on several levels. Makes excellent use of Mac sound and graphics. Fun, casual game, especially when the Mac is one of the players. Requires 512K+. $30. Timeline, PO Box 60, Ypsilanti, MI 48197. NCP (Jun 87)

Borrowed Time casts players as detectives who have to solve their ★★★★ own murder—before it happens. This game requires players to think and act like a detective to solve the game. Good sentence parser, sketchy Mac interface. $44.95. Activision, PO Box 7287, Mountain View, CA 94039. CP (May 86)

Bridge 4.0 provides three other players and the cards for a game ★½ of rubber bridge. It's an average (Goren) bidder and a less than good card player. Good if it's the only game in town. Plays slowly since it's written in BASIC. $29.95. Artworx Software, 150 N. Main St. Fairport, NY 14450. CP (Sep 86)

Bureaucracy is a paranoiac text adventure that dares you to move ★★★½ to a new house and job and still maintain some degree of sanity, not to mention a low blood pressure. Written by Douglas Adams of *Hitchhiker's* fame. $39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. NCP (Aug 87)

The Chessmaster 2000 is a masterful chess program that will ★★★★★ appeal to both novices and master. You can view the board from 2- or 3-D perspective and turn the board for a better look. Play is smooth and easy, and the program responds by voice. $39.95. The Software Toolworks, 13557 Ventura Blvd., Sherman Oaks, CA 91423. CP (Jul 87)

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MINIFINDERS

Dark Castle is an outstanding achievement in action games which ★★★★★ integrates RealSound with superb animation and graphics. You'll need better-than-average hand/eye coordination, but it's well worth the effort. Requires 512K+. $39.95. Silicon Beach, PO Box 261430, San Diego, CA 92126. NCP (Apr 87)

Deja Vu: A Nightmare Comes True is a graphic adventure that ★★★★★ breaks new ground. Innovative use of the Mac interface in truly playable and exciting game. A great introduction to graphic adventure games. $49.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. CP (Jan 86)

Dinner at Eight is a useful recipe filing system that includes a ★★★★ collection of recipes from a nationwide sampling of restaurants. Users enter number of diners and program scales recipes accordingly. $49.95. Rubicon, 2111 Dickson Dr., Austin, TX 78704. NCP (Jan 86)

Down Hill Racer is an action game with three skier personalities, ★★★★ four courses and four skill levels. There's something here for every player, no matter how bad or good. Full digitized sound (very nice!) requires at least 1M. Requires 512K+. Not XL compatible. $49.95. Miles Computing, 7741 Alabama Ave., Canoga Park, CA 91304. CP (Sep 87)

Enchanted Scepters is a surround sound graphic adventure ★★★★ game. It has a limited vocabulary and virtually no story. Offers extensive and varied scenes and utilizes the Mac interface to the fullest. $39.95. Silicon Beach, PO Box 261430, San Diego, CA 92126. CP (May 86)

Ferrari Grand Prix is an exciting race car simulation game. ★★★★ Mastering it takes quite a bit of time and effort. Startup course and four other courses are built into the program. You can also design your own courses and backgrounds. Requires 512K+. $59.95. Bullseye Software, PO Drawer 7900, Incline Village, NV 89450. CP (Jul 87)

Flight Simulator puts you at the controls of a small plane (prop or ★★★★ jet) and lets you roam North America. As difficult as real flying. Mac version has features not found on earlier versions, including spotter aircraft. Not all features available on 128K. $49.95. Microsoft, 16011 NE 36th Way, Redmond, WA 98073-9717. CP (Nov 86)

Fokker Triplane is about as near to flying as you can get seated in ★★★★ front of a computer. Very realistic simulation and excellent graphics. Well designed and implemented. $59.95. Bullseye Software, PO Drawer 7900, Incline Village, NV 89450. CP (Feb 86)

Gato puts players in command of an American submarine in World ★★★★½ War II. This superb simulation game uses all of the Mac's graphic capabilities to really make you feel that "you are there." $49.95. Spectrum HoloByte, 2061 Challenger Dr., Alameda, CA 94501. CP (Nov 85)

Grand Slam is an absorbing and realistic tennis simulation game. ★★★★ Practice or play tournament against Mac-controlled players with different styles and abilities on four different surfaces. 512K or Mac Plus. $49.95. Infinity Software, 1331 61st St., Emeryville, CA 94608. CP (Nov 86)

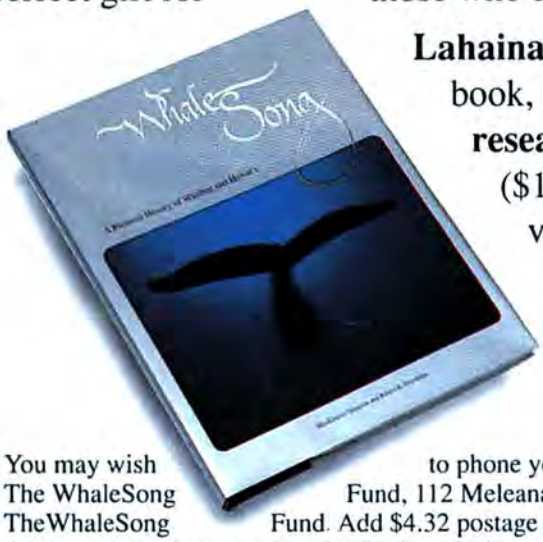
HardBall is a baseball simulation game complete with umpire's ★★★★ calls and crowd sounds. Great graphics and a lot of fun for fans. $44.95. Accolade, 20813 Stevens Creek Blvd., Cupertino, CA 95014. CP (Feb 87)

Hollywood Hijinx substitutes a modern Hollywood estate for the ★★★★ famous Underground Empire, but otherwise represents a return to *Zork* gameplay and feel. Simplistic, but good, "finely wrought and goodhearted game." $39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. NCP (Jun 87)

Leather Goddesses of Phobos is another in the long line of witty ★★★★★ and entertaining Infocom text adventures. This one lets you

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choose your sex and comes with a 3D comic and a scratch 'n' sniff card. It has three levels of play: tame, suggestive and lewd. $39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. NCP (Feb 87)

Lode Runner is a 150-screen action-strategy challenge. Move ★★★★ around a grid of ladders and platforms collecting treasure; dig a hole to trap pursuers. Build your own challenges. $39.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP

MacCourses adds four very challenging new courses to *MacGolf*. ★★★½ Courses are swapped on the original *MacGolf* master disk two at a time. Nice add-on for a good game. Requires *MacGolf*. $34.95. Practical Computer Applications, 1305 Jefferson Hwy, Champlin, MN 55316. CP (Apr 87)

MacGolf is a dynamic simulation of real golf. Players have a ★★★★½ choice of courses and difficulty levels. Superb playability makes this a must for all golfers and gamers. Requires 512K+. $59.95. Practical Computer Applications, 1305 Jefferson Highway, Champlin, MN 55316. CP (May 86)

MacMan is a two-part package. The software portion is a decent ★★★★★ *PacMan*-like game. The hardware part is a tiny converter that lets you use a joystick with a Mac or Mac Plus. $39.95. Nuvo Systems, 225 Tank Farm Rd., San Luis Obispo, CA 93401. CP (Aug 87)

Mac Pro Football is a terrific sports simulation that gives you the ★★★★ chance to pit any combination of 38 Super Bowl teams against each other and direct team play. It comes with excellent, detailed (and necessary) documentation. Play selection can get a bit Byzantine. $49.95. Avalon Hill, 4517 Harford Rd., Baltimore, MD 21214. CP (Mar 87)

MacRacquetball uses digitized videos and sounds of professional ★★★½ players for a realistic simulation. Has lots of control settings and can be played against someone else over a modem or between hard-wired Macs. Turn off hard disks before playing. $59.95. Practical Computer Applications, Inc., 1305 Jefferson Highway, Champlin, MN 55316. CP (Oct 87)

Make Millions is a fascinating business simulation in which the ★★★★★ player competes against the computer to take control of five companies, then run them profitably. Appeals to the closet capitalist in all of us. $49.95. Scarborough Systems/Mindscape, 3444 Dundee, Northbrook, IL 60062. CP

Maze Survival challenges players to destroy maze walls before ★★½ roving bugs squash themselves against it. Bugs lay eggs to spawn a new generation. Repetitive. $34.95. Oluvai Software, 830 NE Pop Tilton's Pl., Jensen Beach, FL 33457. NCP (Aug 87)

MazeWars+ is an interactive, multiplayer game to be played on ★★★★ AppleTalk or through a modem link. Chase opponents through a four level maze. Requires 512K+, AppleTalk or Hayes compatible modem. $49.95. MacroMind, 1029 W. Wolfram, Chicago, IL 60657. NCP (Nov 86)

Mind Over Mac features five games. Entertainment for the whole ★★★★ family. Good graphics paired with synthesized sound and on-screen help. $49.95. Think Educational Software, 16 Market St., Potsdam, NY 13676. CP (Feb 86)

MoonMist is Infocom's latest introductory level text adventure ★★★ game. This is a typical haunted English castle story, not quite up to Infocom's best. It has four versions, so it's good for more then one play. $39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. NCP (May 87)

NewGammon is animated backgammon that will challenge even ★★★★ good players. Features include variable skill levels and strategies and options to play the Mac or watch the Mac play itself. An arcade-like high speed mode is included. $39.95. Newsoft, PO Box 3046, Newport Beach, CA 92663. CP

NFL Challenge simulates coaching and watching professional ★★★½ football. Comes on two disks, one with program and system, the other statistical data. Play against either human or computer coaching. Plays are selected from pre-defined playbooks. $99.95. XOR Corp., 5421 Opportunity Ct., Minnetonka, MN 55343. NCP (Jun 87)

Ogre is a strategy tank game played on a hexagon grid. The ogre is ★★★★ an intelligent cybertank out to smash your command post. Customize your defense. Exceptionally good Mac interface. Has two-player option. $30. Origin Systems, 136 Harvey Rd., Building B, Londonderry, NH 03053. CP (Nov 87)

Orbiter puts a real space shuttle on the Mac screen. A multitude of ★★★★½ controls, intelligent on-board computer with speech capabilities, real-time graphics and 16 distinct missions help this program succeed as both a game and a simulation. $49.95. Spectrum HoloByte, 2061 Challenger Dr., Alameda, CA 94501. NCP (Jul 86)

Orbquest is a fantasy role-playing adventure with better-than-★★★½ average puzzles and an excellent sense of humor. Not as sophisticated as some, but a good value. $49.95. QWare, PO Box 850415, Richardson, TX 75085. CP (Dec 86)

Patton vs. Rommel is traditional-style strategic wargame. It ★★★★ covers events in Normandy in 1944. While complex, it's well designed and very playable. $39.95. Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404. CP (Apr 87)

The Pawn is an unusual British interactive adventure game with ★★★½ text and graphics. The unique interface has some drawbacks, but *The Pawn* has humor, social satire, is entertaining and is challenging. $44.95. Requires a Mac+. Firebird, PO Box 49, Ramsey, NJ 07446. CP (Mar 87)

Pinball Construction Set lets users create their own pinball ★★★★ games, as elaborate or as easy as desired. Uses *MacPaint* for backgrounds and has lifelike sounds (on 512K+ Macs). $39.95. Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404. CP (Jan 86)

Portal is an intriguing science fiction novel for kids that suffers ★★★ from having a poor interface. Storyline: all of humanity is missing and you have to search through a data base for files that reveal the mystery. Nothing in the way of role-playing, and the Mac version is slow and buggy. $49.95. Activision, PO Box 7287, Mountain View, CA 94039. CP (Oct 87)

Puppy Love is a combined game and teaching tool. As you teach ★★★★½ your puppy tricks and routines, you learn the basics of programming logic. Great fun for all ages. Does not run from a hard disk. $29.95. Addison-Wesley, Route 128, Reading, MA 01867. CP (Mar 87)

Real Poker is five-card draw against five other players with Old ★★★★½ West names, distinct personalities and playing styles, in a saloon setting. Dealing and play are very fast. Game evaluates your hand. $39.95. Henderson Associates, 980 Henderson Ave., Sunnyvale, CA 94086. CP

Seven Cities of Gold is an educational program masquerading as ★★★★ an adventure game; and is practically unique in being equally good in both respects. You are to land (not the easiest part) in the New World and attempt to placate the natives, seed a few missions and collect gold. Nice work if you can get it. $39.95. Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404. CP (Jun 87)

Shadowgate is an icon-based graphic adventure. You, as the seed ★★★★★ of prophecy, must save the world from the evil warlock. Far surpasses all others with great animated graphics, sound and adventure. $49.95. Mindscape, 3444 Dundee Rd., Northbrook, IL 60062. CP (Sep 87)

Shanghai challenges players to clear a board of all 144 tiles, by ★★★★★ matching pairs of mah-jongg tiles and removing them. Terrific strategic options plus the ability to randomly generate new game boards keep this one fresh. $44.95. Activision, PO Box 7287, Mountain View, CA 94039. CP (Nov 86)

Skyfox is a sophisticated 3D shoot-em-up. You're fighting tanks, ★★★ planes and enemy cities floating in the sky. Fast graphics, good sound, slick, on-board attack computer and many levels of difficulty will keep fans of this genre happy for hours. $39.95. Electronic Arts, 1820 Gateway Dr., San Mateo, CA 94404. CP (Oct 86)

Smash Hit Racquetball is an accurate and entertaining simula-★★★★½ tion of a day on the courts. Digitized sound adds to the realism. Includes a hard disk install, unusual for a game. The low price makes this the perfect Mac gift. $19.95. Primera Software, 650 Cragmont Ave., Berkeley, CA 94707. CP (Dec 86)

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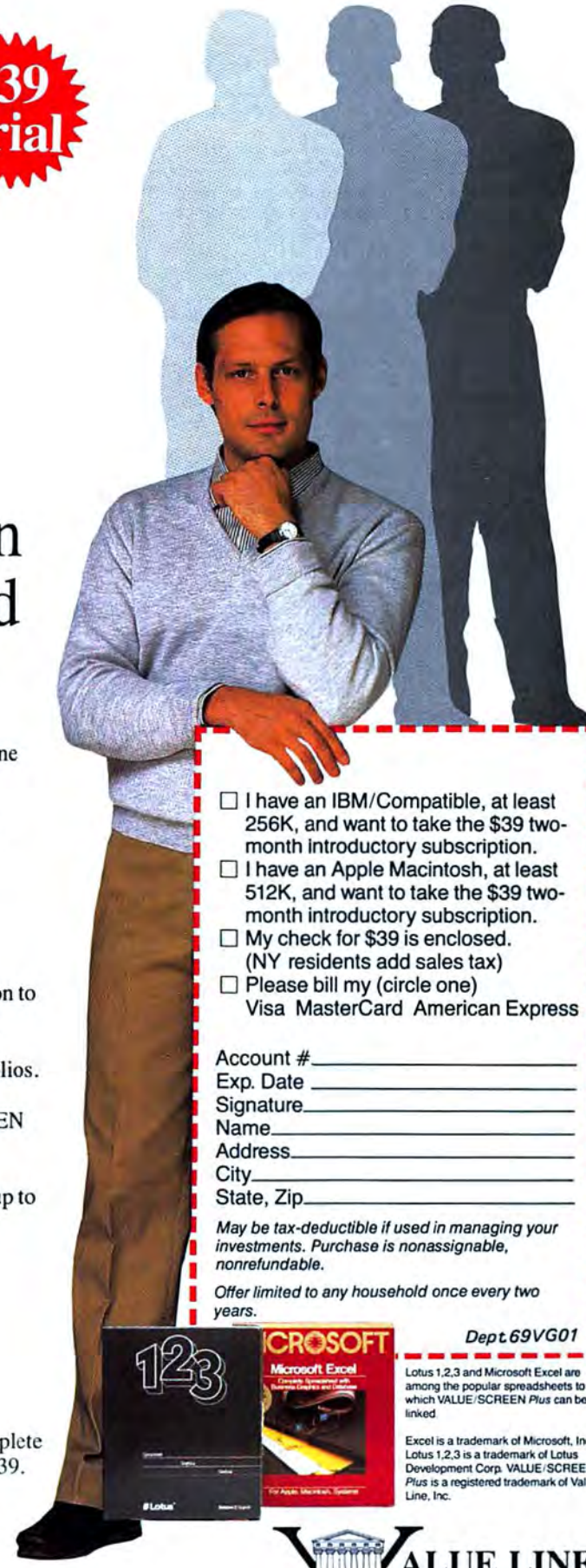
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MINIFINDERS

Space Quest is a three-dimensional, animated adventure in which ★★★★ you play a janitor in a dicey situation. All you have to do is get off your ship before it explodes and save the Earnon System. Runs on any Mac. Sierra On-Line, PO Box 485, Coarsegold, CA 93614. CP (Sep 87)

Stationfall is the sequel (finally) to Infocom's excellent *Planetfall* ★★★★½ text adventure. Reunited with Floyd and sent to pick up requisition forms, you must solve the empty space station problem. As straightforward as other Infocom games; more so than some. $39.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. CP (Nov 87)

Strategic Conquest is a large scale, strategic conflict on the ★★★★ Mac. This very involved war game will be enjoyed by those who like this genre. $59.95. PBI Software, 1163 Triton Dr., Foster City, CA 94404. CP (Dec 85)

Tass Times in Tone Town is a slightly off-the-wall graphic ★★★½ adventure in which you need a flashy hairdo and a jumpsuit before you can get anywhere, and you pay for things with guitar picks. $44.95. Activision, PO Box 7287, Mountain View, CA 94039. CP (Jan 87)

The Toy Shop is a construction kit for building 20 different working ★★★★ model toys. Some parts can be customized. Manual gives clear instructions, but many toys are too complex for a child to build. $49.95. Broderbund, 17 Paul Dr., San Rafael, CA 94903. CP (Nov 86)

Ultima III allows up to four characters to cooperate to explore the ★★★★½ vast wilderness of Sosaria. $59.95. Origin Systems, 340 Harvey Rd., Manchester, NH 03103. CP

Uninvited is an icon-based adventure game set in an extremely ★★★★★ haunted mansion. Since you access the parser by double-clicking, command choices are always visible—you don't waste time trying to figure out which words the program understands. It has animation and sound. $49.95. Mindscape, 3444 Dundee, Northbrook, IL 60062. CP (Sep 86)

Winter Games lets up to eight players compete against each other ★★★★ in Olympic events including figure skating, bobsledding, biathlon and ski-jumping. Excellent animation, good graphics, good theme music. $39.95. Epyx, 600 Galveston Dr., PO Box 8020, Redwood City, CA 94063. CP (Mar 86)

Wizardry is an outstanding dungeon exploration adventure pitting ★★★★★ a party of up to six characters against the guardian monsters of the evil wizard Werdna. Capture his amulet to earn your reward. Even after solving the game, you'll want to go back into the dungeon. $59.95. Sir-Tech, 6 Main St., Ogdensburg, NY 13669. CP

WordPlay is a word game with over 50 crossword puzzles for ★★★★ different levels of expertise. User friendly, it offers on-screen Help menus. A Work mode allows development of new puzzles for the creative. $49.95. Palantir, 12777 Jones Rd., Houston, TX 77070. NCP (Mar 86)

World Builder is an adventure game construction set with what ★★★★½ amounts to its own programming language. The whole program (language including) is easy to learn and produces commercial quality games. No support for the programming language, though. $79.95. Silicon Beach Software, PO Box 261430, San Diego, CA 92126. NCP (Apr 87)

Xyphus is a role-playing game pitting four characters (fighters or ★★★★ wizards) against multiple scenarios that grow increasingly harder. Excellent Mac interface and icon control. $39.95. Penguin, PO Box 311, Geneva, IL 60134. CP

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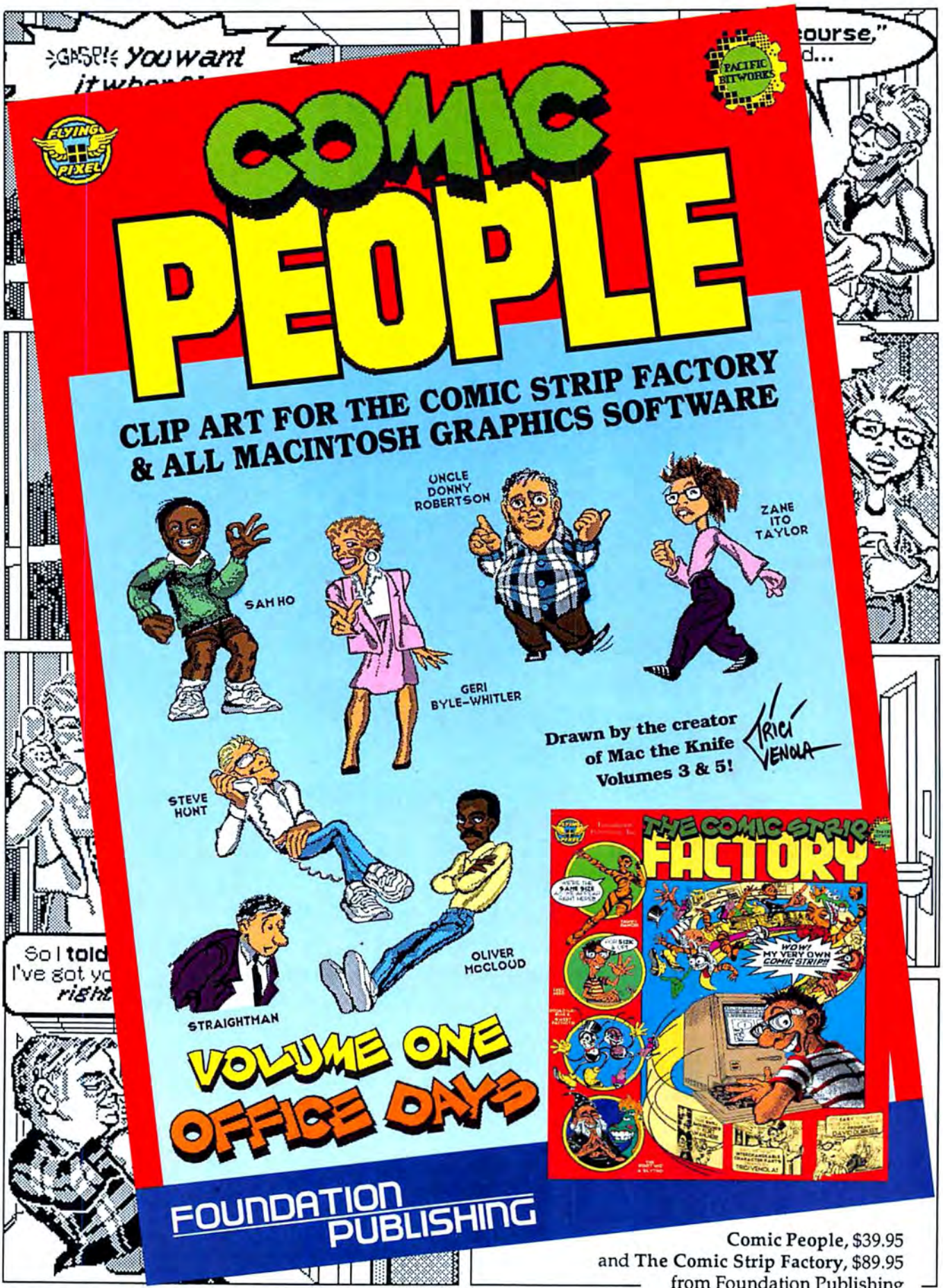
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MINIFINDERS

envelopes. Does not run when connected to a LaserWriter. Requires 512K+. $29.95. Computer Poet Corp., PO Box 7707, Incline, NV 89450. NCP (Jun 87)

Zork II is where the adventure continues in the underground ★★★★½ empire. A wandering wizard keeps things interesting, though there's a way to beat him if you persevere. $44.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. NCP

Zork III is the final chapter in the trilogy. Players come up against ★★★ the ultimate enemy—the Dungeonmaster himself. More closed-ended than previous *Zorks*. $44.95. Infocom, 125 CambridgePark Dr., Cambridge, MA 02140. NCP

MUSIC

ConcertWare+ is an enhanced version of *ConcertWare*. Has ★★★★½ different instruments and can use any four of a set of eight at any point in a piece. Can read and use *ConcertWare* and *MusicWorks* files. $69.95. Great Wave Software, 5353 Scotts Valley Dr., Scotts Valley, CA 95066. NCP (Nov 85)

Jam Factory is a program for manipulating MIDI data in real time. ★★★ Absolutely impossible to figure out without a thorough reading of the manual and lots of practice. Requires 512K+, MIDI interface and MIDI synthesizer. $189. Intelligent Computer Music Systems, PO Box 8748, Albany, NY 12208. CP (Oct 87)

Listen is an educational tool for ear training. It has both a piano ★★★★ keyboard and a guitar fretboard for the student to input notes, and offers a wide range of exercises. It also produces some beautiful sounds. $69. Imaja, PO Box 638, Middletown, CT 06457. CP (Jan 87)

M is a music creation program that also uses real time MIDI data. ★★★ Absolutely impossible to figure out without a thorough reading of the manual and lots of practice. Requires 512K+, MIDI interface and MIDI synthesizer. $219. Intelligent Computer Music Systems, PO Box 8748, Albany, NY 12208. CP (Oct 87)

MIDIBasic is a simple, but highly useful routine for writing MIDI ★★★★ software. Good stuff. Sketchy documentation. Works with both *Microsoft* and *ZBasic*. Requires 512K+ plus Basic. $49.95. Altech Systems, 831 Kings Highway, Shreveport, LA 71119. NCP (Aug 87)

Music Mouse is a music program in a genre all its own. Called an ★★★★★ "intelligent instrument," *Music Mouse* gives you instant musical feedback as you move the mouse and type on the keyboard, which controls tempo, vibrato, volume, etc. $59.95. OpCode Systems, 444 Ramona St., Palo Alto, CA 94301. NCP (May 87)

Performer is a strong contender for the high-end of the MIDI ★★★★ sequencer market. Only those experienced with MIDI should get this. Files can be transported to *Professional Composer* for editing. No direct track or segment looping. $295. Mark of the Unicorn, 222 Third St., Cambridge, MA 02142. CP

Practica Musica uses an interactive, game and practice approach ★★★★ to teach music theory and ear training. Excellent training tool for the serious music student, it is also fun for anyone who wants to develop a trained ear for intervals, chords and melodies. Requires 512K. $59.95. Periscope Press, PO Box 6926, Santa Barbara, CA 93160. CP (Nov 87)

Professional Composer is aimed at music professionals. Pro- ★★★ duces performance-quality sheet music; has only limited playback facilities. $495. Mark of the Unicorn, 222 Third St., Cambridge, MA 02142. CP (Prem)

Studio Session consists of two programs, an Editor and a Player, ★★★★½ that produce music with six voices of digitized sound.

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Excellent program plus good manual make this a good buy. $89.95. Impulse, 6870 Shingle Creek Pkwy., Minneapolis, MN 55430. CP (Dec 86)

HARDWARE & ACCESSORIES

AST TurboScan is a 300 dpi scanner with sophisticated graphics ★★★★ software. Scans at resolutions from 72 to 300 dpi. *SuperScan* software offers halftone, line art and mixed modes. "Virtual memory processing" lets you scan images too large to fit in RAM. $1899. AST Research, 2121 Alton Ave., Irvine, CA 92714. Requires 512K+. *SuperScan* software included. NCP (Nov 87)

CMS S-140 SCSI Hard Disk is a very fast, high-capacity SCSI hard ★★★★★ disk with a unity interleave and average access time of 18 msec. Holds 140 M. Help, file transfer and tape backup commands built in. *Hard Disk Partition* is a useful DA that comes with a 6 ft. SCSI cable. $2995. CMS Enhancements, 1372 Valencia Ave., Tustin, CA 92680. (Jul 87)

DASCH is an external RAMdisk available in half, 1 and 2M sizes. ★★★ Connects to a serial port. Speeds up operations 200 to 300%. Can be used as a printer buffer. Works with all Macs. 512K, $395; 1M, $450; 2M, $545. Western Automation Laboratories, PO Box 3438, Boulder, CO 80307. (Feb 87)

Data Frame 40XP is a very fast, very quiet 40-meg external SCSI ★★★★ hard drive. Comes with a good and complete set of utility software. About as fast as a SCSI drive can be. Requires SCSI port, 512K+, new ROM. $1899. SuperMac Technology, 295 N. Bernardo Ave., Mountain View, CA 94043.

FX-20 is a good 20-meg external hard drive. Good utility software. ★★★★ Reliable, and reasonably quiet. Sits next to Mac, has a large, oddly shaped case. Requires SCSI port, 512K+, new ROM. $1199. General Computer, 215 First St., Cambridge, MA 02142. (Feb 87)

Hard Disk 20SC is Apple's 20-meg SCSI hard disk. Reliable, fairly ★★★★ noisy unit. Good utility software, but no backup yet. Requires cable and terminator ($80). Requires SCSI port, 512K+, new ROM. $1299. Apple Computer, 20525 Mariani Ave., Cupertino, CA 95014. (Feb 87)

MacBottom 45 SCSI and Internal Modem has a modem that fits ★★★★½ into the top half of the 45-megabyte SCSI hard drive case. Comes with *HFS Backup* and *Eureka*. Does not work with a Mac II. $1795. Personal Computer Peripherals Corporation, 6204 Benjamin Rd., Tampa, FL 33634. (Oct 87)

MacBottom HD21 is a very low (about 2 inches high), external 20- ★★★★★ meg hard drive. Fits under the Mac. Very quiet, very reliable. Good utility software, including *HFS Backup*. Requires SCSI port, 512K+, new ROM. $1195. PCPC, 6204 Benjamin Rd., Tampa, FL 33614. (Feb 87)

MacCharlie's components slip around the Mac and convert it into ★★★★ an IBM PC clone. Amazingly, it works well. The enlarged keyboard has a few bugs but is a joy to use. $995. Dayna Communications, 50 S. Main St., Salt Lake City, UT 84144. (Dec 85)

MacIntizer is a graphics tablet and absolute positioning device ★★★★ that replaces the mouse. Various scales are possible. $599. GTCO Corp., 7125 Riverwood Dr., Columbia, MD 21046.

MacNifty Sound Digitizer turns ordinary analog sound input into ★★★★½ digital waveforms which can then be manipulated using the *SoundCap* software it comes with. Capable of truly stunning effects. Requires 512K+. $129.95. Impulse, 6870 Shingle Creek Pkwy., Minneapolis, MN 55430.

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MacSnap Plus 2 is a 2M memory upgrade for the Mac Plus. The ★★★★ board has 256 kilobit chips. User installable. Not compatible with existing big screens or internal hard disks, and can't be expanded further. $399. Dove Computer Corp., 1200 North 23rd St., Wilmington, NC 28405. (Jun 87)

MacTablet is a stylus-driven graphics tablet. Users can easily ★★★★ sketch or trace art using this absolute-positioning device. Has a working area the size of the Mac screen. Allows concurrent use of the mouse. $495. Summagraphics Corp., 777 State St. Extension, Fairfield, CT 06430. (Jan 86)

MacTilt/MacTilt SE is a Mac (and external drive) holder that ★★★★ allows a full range of swiveling and tilting. Very strong, this well made unit is also very easy to use. $99.95. Ergotron, PO Box 17013, Minneapolis, MN 55418.

MacVision is a digitizer that uses an ordinary video camera for ★★★★ input. Capable of extremely fine results and special effects. Easy to use and well documented. $349.95. Koala, 269 Mt. Hermon Rd., Scotts Valley, CA 95066.

Magic Digitizer is a hardware digitizer that works with video ★★★★ cameras. With *LaserMagic* software you can generate 300 dpi images (in PostScript). Requires 512K+. Digitizer with *Magic* software, $399.95; *LaserMagic* software, $49.95. New Image Technology, 10300 Greenbelt Rd., Seabrook, MD 20706. NCP (May 87)

Migent Pocket Modem is a 300/1200 baud portable modem ★★★½ about the size of a 3 x 5 index card. Comes bundled with *MacTerm* 2.0, Borland's telecom DA. Manual is confusing, and tech support is minimal. $259. Migent, 865 Tahoe Blvd., Incline Village, NV 89450-6062. (Nov 87)

Mouse Mover is a mouse pad-type surface that snaps on to the ★★★★½ bottom of the mouse like a roller skate, freeing it up to glide over desk or mouse pad with ease. 99 tiny ball bearings at three strategic points. Mouse glides faster and saves on mouse wear and tear. $19.95. Magnum Software, 21115 Devonshire St., Chatsworth, CA 91311.

Moustrak is a fabric covered foam mousing pad. It will increase ★★★★ the efficiency of your mouse while helping to keep it clean. Pad comes in a variety of colors. Particularly useful in the typical office desktop environment. $10. Moustrak, 3047 St. Helena Hwy., St. Helena, CA 94574.

One Plus One is a user-installable memory upgrade for a Mac ★★★★½ Plus. Adds 1 megabyte of RAM to the 1M already there. Simple one-evening project. Includes MacBreeze, an excellent small fan. Requires Mac Plus. $395. Levco, 6160 Lusk Blvd., San Diego, CA 92121. (Aug 87)

PhoneNET is an AppleTalk-compatible network. Network can be up ★★★★★ to 3000' in length. In-place, unused phone cabling can be used for network, and can be combined with AppleTalk on same network. $49 per node. Farallon Computing, 2150 Kittredge St., Berkeley, CA 94704. (Dec 86)

SuperRam 2 and SuperRam 4 are 2- and 4-megabyte RAM ★★★½ upgrades. Should be dealer installed but can be (carefully) user installed. SuperRam 2 includes RAM adaptor module, 1-meg memory module, modified power cable, jumper and fan. SuperRam 4 adds power supply booster and two 1-meg memory modules. Not compatible with most big screens. $499. SuperMac Technology, 295 N. Bernardo, Mountain View, CA 94043. (Oct 87)

ThunderScan replaces the ribbon cartridge in an ImageWriter, ★★★★ which is required to use it. Laser scans art that can be run through the ImageWriter, producing high-quality digitized images. The images can be manipulated as they are created or afterward. $249. Thunderware, 21 Orinda Way, Orinda, CA 94563.

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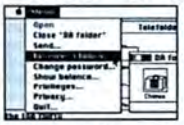
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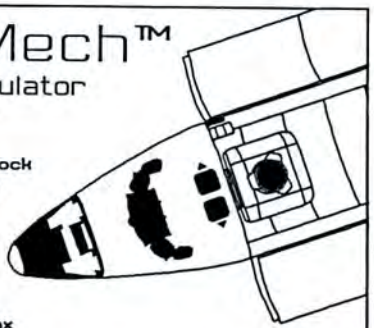
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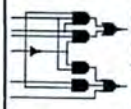
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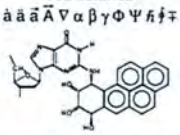
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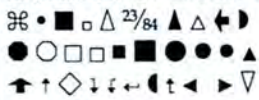
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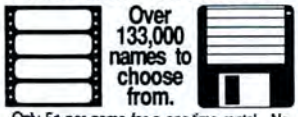
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by John C. Dvorak

Secret Memo Revealed

The document cost me $1500 and all I got was a photocopy. It was the fascinating and much discussed "5-point plan" memo issued by the Publicity Prevention Association (PPA) of San Jose, California. The PPA is comprised of members of the big name high-tech public relations firms with about 40 or 50 members-at-large who are PR people or so-called communications specialists at some of the most famous hardware and software firms in the country. These are the people who influence what you read and hear. I found it interesting.

The memo was dated July 15, 1987 and issued by PPA Chairman, Jerry Maxwell, formerly of Maxwell, Maxwell, Maxwell and Rabinowitz, a big name PR company in San Francisco. The subject was simply "Sloppy Publicity Prevention—the Plague of the 80's."

The following is a lightly edited transcript of the memo.

BACKGROUND. Over the past few months our offices have been besieged with complaints as to how many of our member firms have been mishandling the public relations function of far too many small and large high-tech corporations. These are companies that we have to keep out of the news. You know the reason—if they're in the news they'll make too much money. It goes to their heads and the next thing you know they fire the PR firm.

I don't want to remind you that our job is publicity prevention. For some unknown reason some members are beginning to think that just because they are called public relations firms they should help clients get publicity. That is not our job. Let me reiterate: our job is to spend a client's money and make sure they don't grow too fast and fire us.

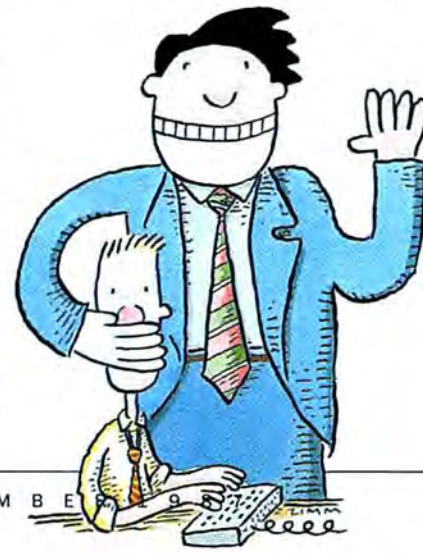
Publicity prevention is a full-time job. Because of the rash of complaints, I am proposing a 5-point plan to help member firms shape up fast.

Point One: Evaluate your personnel. All member firms should appraise their personnel. There are too many PR members who are learning too much about their clients and are unable to act stupid when talking to the press. We are not hired to answer questions—especially technical ones. We are hired so neither the media nor anyone else can get hold of knowledgeable company employees.

There is also a seminar given by PPA once a year called "Idiosyncratic Irritations: How to Develop One." I recommend member firms send at least two people to this event. I personally find the hour devoted to "talking through your teeth" to be particularly valuable.

Point Two: Changing Names. I can't emphasize this enough. You have to encourage your people to change their names. Actors do it. Writers do it. PR people should do it too. We want to see more men with first and last names that both sound like first names and therefore reversible. A good example is Bradley Wayne of ConComCo. People can't figure whether he's Wayne Bradley or Bradley Wayne. It puts them on the defensive and at the same time has that upper-class ring to it.

Women can do worse than use a hyphenated last name. Also all the i's in a name should be changed to "y". A good name is Lynda Blayne-Buehler who also works for ConComCo. Her real name is Linda Lipshitz. No excuse for using a name like THAT! And whatever you do, DO NOT, I repeat—DO NOT—ignore a good old-fashioned English name. We last month sent out a shill who asked for work as a PR man. His name was Marmaduke Bensen-Bloodthorpe III. Ten firms turned him down before PR is Us hired him. This is inexcusable.



Point Three: Dress Code. Executives, please tell the ladies to stop experimenting with their attire. The rule is simple. Just remember the saying: Ladies, dress like a man and on your underarms use Ban. Our inspectors have recently seen PR women who were not buttoned all the way up to the neck. That means the top top top button. I'd like it if the whole neck were covered. The ankles have to be covered too. We are promoting those homely little preppy socklets. The idea is to look like an uptight prude. Ladies, think "librarian" or worse, Ok? And at least once a night practice pursing your lips in disgust. Newspaper writers find this habit particularly annoying since many of their editors have developed the same affectation.

The men aren't doing much better. Some PR professionals were seen with their top button undone and tie loosened. No good. This makes you look like one of the boys and too nice a guy. Forget it. We recommend a brown suit, beige shirt, annoying red power tie and, above all, wingtip shoes. Huge wingtip clodhoppers are the best. The watch to wear is one of those Seikos that store phone numbers or a yuppie "moon" watch. Your shirt should be the kind with the holes in the collar so you can put a spike behind your tie.

Point Four: Automobile. BMW, Volvo, SAAB. Enough said.

Point Five: Work Habits. We have basic problems. Some PR people are letting the media get hold of the president. He gets quoted and we haven't done our job. We have to keep the media away from the company presidents. This can be done by a) not returning phone calls, b) lying about their whereabouts or availability, c) claiming they're sick (or even dead). There are plenty of creative things we can do.

In summing up. If we bear down for the rest of the year we can slow growth and keep things on an even keel. Above all, we will keep our jobs. A final reminder. If you haven't paid your 1987 dues, they are now past due. Call Mrs. Jenkins at ext. 872.

I thought this might give you some insight into this industry.

ROBERT ZIMMERMAN

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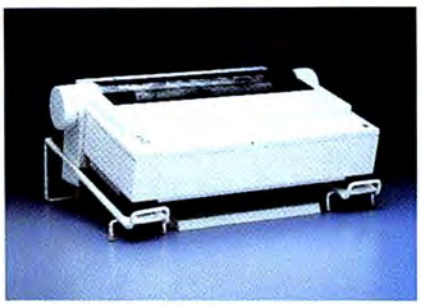
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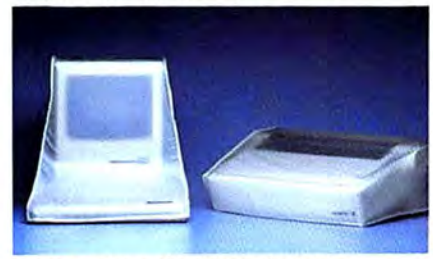
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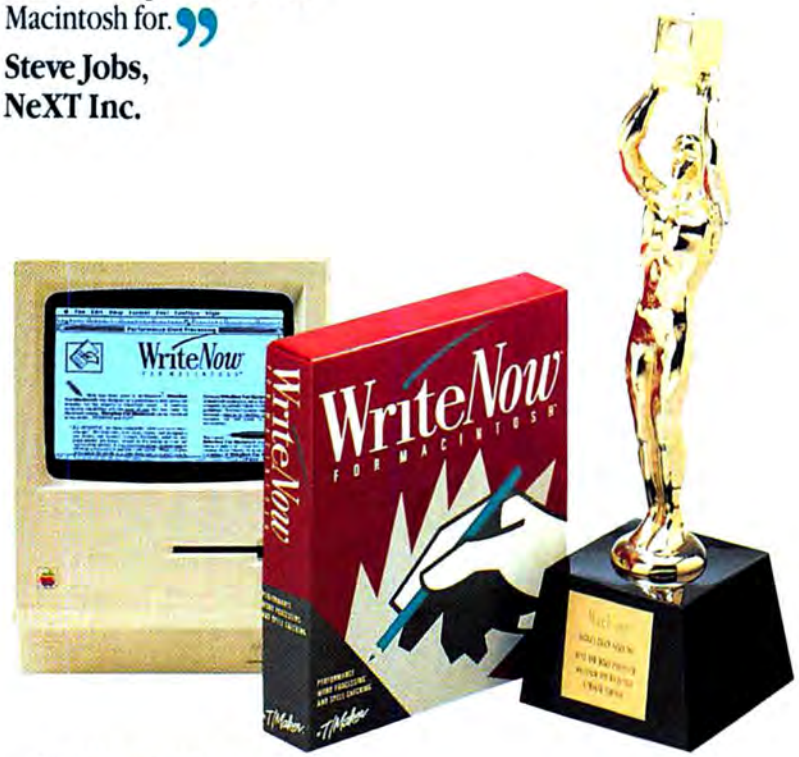
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